

PACIFIC PULP & PAPER ♦ INDUSTRY

DECEMBER
1934



WEEKLY
NUMBER 12
4 PAGES
35 CENTS



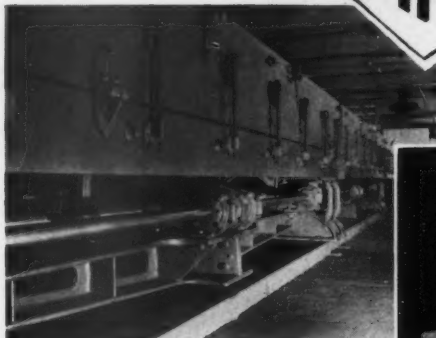
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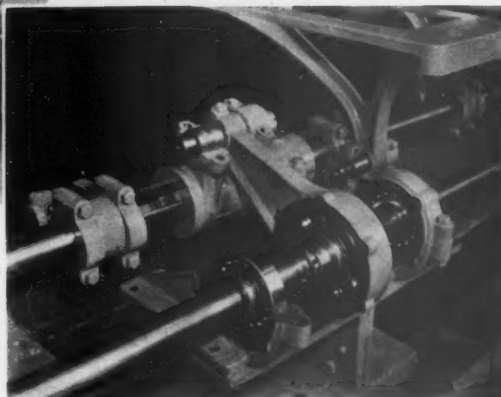
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PACIFIC PULP & PAPER INDUSTRY

THE PACIFIC COAST JOURNAL FOR PRODUCERS, CONVERTERS,
AND DISTRIBUTORS OF PULP, PAPER, AND BOARD.

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Vol. 8

DECEMBER, 1934

No. 12

COAST HAS BRIGHT FUTURE BOYCE TELLS SUPERINTENDENTS

"I think you have the brightest future here on the Pacific Coast," Fred C. Boyce, "father of the Superintendents' Association" and superintendent of the Wausau Paper Mills, told the members of the Pacific Coast Division at the banquet, Saturday evening, December 8th.

"If the mills in the East and Middle West don't build new plants and buy new and modern equipment, they will soon be a thing of the past," Mr. Boyce predicted. "I don't see how antiquated machinery that has been speeded up beyond its normal productive capacity can last much longer.

"Only one new paper machine was installed in the United States in 1933 and but one this year, while in England, where the tariff is giving adequate protection, ten new paper machines are being installed this year." Mr. Boyce compared the advantages of Pacific Coast mills with their modern plants and new equipment over the out-of-date mills in the Eastern sections of the country. He pointed out that the sale of but two new paper making machines in two years indicated clearly that the majority of paper production in the United States was being made on old machines that ought to be replaced.

This is Mr. Boyce's second trip to the West Coast in recent years and he told the superintendents that he was more than ever impressed with

the progress being made. He visited several mills before attending the meeting at the Hotel Winthrop, Tacoma, December 7th and 8th. He attributed the progress in production methods made during the past ten years both on the Coast and in other sections, to the work being done by members of the Superintendents' Association and of TAP-PI.

Greetings from Kil Kerry, national president, were brought to the West Coast men by Mr. Boyce. He reminded those present that they would find something of benefit in every meeting and that in the many years since the Superintendents' Association was founded he never yet had failed to obtain something of value from a meeting.

Scott Henderson, a prominent Tacoma lawyer, enlivened the banquet with his inimitable wit. As toastmaster he introduced the speakers starting with James G. Ramsey, superintendent of the Everett Pulp & Paper Company and a past president of the national association. Mr. Ramsey told some interesting stories on his friend Fred Boyce before introducing him. Bob Heuer, the retiring chairman of the Pacific Coast Division, thanked the members for their cooperation during the first year of the organization and introduced the new officers who had been elected by unanimous vote at the close of Saturday afternoon's meeting.

The New Officers

Ferdinand Schmitz, Jr., the new chairman of the Pacific Coast Division, is now in Sweden and will not return home until after the first of the year. He is superintendent of the Rainier Pulp & Paper Company at Shelton, Washington.

George H. Brown, superintendent of the Inland Empire Paper Company, Millwood, Washington, was chosen first vice-chairman.

George Cropper, superintendent of the Olympic Forest Products Company at Port Angeles, Washington, was selected as second vice-chairman.

R. C. Onkels, superintendent of the New Westminster Paper Company, New Westminster, B. C., was made third vice-chairman.

H. A. Des Marais, the secretary-treasurer during the first year of the Pacific Coast Division was asked to retain the office for the second year and accepted.

Thanks Committees

Retiring chairman Bob Heuer in the name of the superintendents thanked Mr. & Mrs. Fred C. Shaneman and their committees for the excellent way in which the convention had been staged.

At the speakers table with Fred C. Boyce, the guest of honor, sat H. A. Des Marais, George H. Brown, Thad Stevenson, Mrs. Scott Henderson, H. R. Heuer, Scott Henderson, Mrs. J. G. Ramsey, Mrs. H. R. Heuer and J. G. Ramsey.

Members Come Early

Friday noon the members began to arrive. A few played golf despite foggy weather, but the majority spent the afternoon in the lobby of the Winthrop talking over their problems in making pulp and paper.

By the evening a goodly number had registered and more than a hundred attended the reception where good fellowship reigned. Everyone had a good time singing and enjoying the entertainment provided by Tom Moffitt and his committee.

Saturday Morning Session

The first business session opened Saturday morning with a few words from Fred Boyce, guest of the Pacific Coast Division. The first paper presented was on the subject of rosin sizing. J. V. B. Cox of the Paper Makers Chemical Corporation, Portland, Oregon, pointed out in his paper the salient facts and theories of rosin sizing and emphasized the research work that was being carried on by his own company and others to put the sizing of paper on a more scientific basis.

History of Rosin Sizing

Mr. Cox sketched the historical background of sizing paper with rosin, attributing the discovery of this method of making paper resistant to moisture and ink to Moritz Illig, a German chemist, who in 1807 sized the first paper with rosin. Previously animal glue had been used as a surface size. According to Mr. Cox, scientific work on rosin sizing dates back not more than thirty years. He told the superintendents that, "Rosin sizing, like paper machines and beaters, is basically not so much different now than it was many years ago and most of the

progress has been made within the last two or three decades. Most of the advancement has been made in understanding and in perfecting the technique of sizing towards economy and reliability."

Although much work has been done and much literature published on the subject of rosin sizing, it is still, like other paper making processes, incompletely understood. The chemistry of sizing with rosin is not fully understood and there is no single theory which adequately explains all the phenomena observed in practice. Mr. Cox went on to outline the trend of thought and to explain the ideas advanced by different research men as to just what the actual sizing material is.

From common knowledge among papermakers Mr. Cox pointed out, a set of ideal conditions could be worked out which would result in good sizing, but he added that few mills could attain the ideal. In the first place, paper mills are seldom constructed with thought as to the problems operators will have in sizing the paper, and for that reason the operating men often start with a few handicaps. For this reason together with the absence of a definite workable theory on which to build constructively, much of the approach to sizing is too apt to be that of keeping out of trouble. There are conditions which interfere with sizing all the way through the mill from the wood room to the reels. Many of these conditions are well recognized but some are not. Some, if recognized, can be corrected, and others cannot be made without making changes which would be impracticable for other reasons.

Conditions Interfering With Sizing

At this point Mr. Cox brought out

some of the conditions which interfere with good sizing. The rate of tree growth might affect the cell structure of the wood in such a way as to vary the fibre when made into pulp. This we know little about. We are fairly sure that the methods of cooking sulphite pulp has some bearing on the way the pulp can be sized later, but all we know about it is that in general a hard cooked stock will size easier and use less size than a so-called soft cooked stock. Also it seems that the purer the cellulose the more size is required to do a good job of sizing. What effect encrusting lignins may have we do not know. Easy bleaching stock very often presents more of a sizing problem than stock cooked primarily for strength. The bleach plant is so tied in with other pulp preparations that one cannot say that bleaching methods have any especial effect on the sizing operations except that the stock should be very thoroughly washed after bleaching so that there is no trace of bleach liquor left in it. The fact that bleach liquor is very detrimental to sizing is well known.

Beaters and Sizing

There seems to be no real reason for any preference as to whether the pulp enters the beater as slush, wet laps or dry sheets, although some have prejudices against one form or another. Slush pulp must be well washed and the water it contains should not be detrimental in its chemical content. In the beater the actual precipitation of the size takes place. No two operators or experimenters will agree on the amounts of size, ratio of size and alum and the best pH, but when we stop to consider what we have in the beater there may be some slight explanation for the differences of opinion. Many people do not realize the dilution in the beater is as great as it is, or that the size and alum or other chemicals are used in such extremely small proportions to the total amount of water and stock in the beater.

As the water in the beater usually amounted to 96% of the charge its chemical constituents may be very important in affecting the sizing operation. Water will differ from one season to another and effect the sizing. Where white water from the machines is used, as in a few mills, it will cause trouble if sufficiently acid. In most places here in the Pacific Northwest we have very good water and hence are less apt to pay attention to the water than are operators in sections where the water is



OLD FRIENDS MEET AGAIN

James G. Ramsey, superintendent of the Everett Pulp & Paper Company and a past president of the American Pulp & Paper Superintendents' Association, talks with his friend Fred C. Boyce, superintendent of the Wausau Paper Mills, and called the "father of the superintendents' association." Mr. Boyce was the honor guest of the Pacific Coast Division of the association.



FERDINAND SCHMITZ, JR.
Chairman

known to be bad. Even a very small percentage of mineral content may affect the sizing considerably because the sizing chemicals are employed in very small quantities in proportion to the water used.

View of Sizing as a Chemical Reaction

We have given much thought to this sizing process purely as a chemical reaction, when the chances are very good that it is largely within the realm of colloidal chemistry, and not wholly a reaction forming any new chemical compounds. It is therefore possible that many of these small and relatively unimportant sources of contamination might have more influence on the sizing than we may imagine from ordinary chemical standards.

Beater Action on Fibres

Mr. Cox stated that the stock preparation in the beater, or the treatment which effects the physical form of the fibre, is probably, one of the important factors in sizing. With this we have to include the changes in the fibre or the cellulose from the absorption of water. Some of the experimenters working on rosin sizing recently have given quite a little consideration to the idea of the absorption of sizing or alum by the fibres themselves. Besides, we have the common idea of physical retention of sizing on the machine, and the stock preparation has a great influence on that.

No standard practice exists in adding the size and alum to the beaters. In this country most operators add the size first, fairly late in the beating cycle, and then after the size has had a fairly good chance to

mix into the stock, add the alum and give it just enough time to mix well before dropping the beater. In practice there is little reliable data to show that this works better than other procedures, although there is believed to be some time element in sizing. It is generally considered that the beater should not be run an excessive time after adding the size.

Adding the Size to the Beater

The physical form of the rosin whether in a thin emulsion or a thick paste will effect the efficiency of the sizing. The rosin itself varies as it is the product of a growing plant. The gum from which rosin is distilled varies according to the season. It is subject to all the variations which may affect a growing tree. Rosin is graded only on color and may vary in melting point,

cause variations in the size test of the finished sheet.

Speed of the Paper Machine

With machines running very fast and an excessive amount of suction being used on the flat boxes and on the suction roll, the amount of size retained in the sheet may be reduced to a small part of that originally put into the stock. There is a tendency, which has been common for about ten years, for the operators of older machines to speed them up, necessitating the use of a great deal of suction under the wire. This usually results in rather poor retention of the sizing in the sheet compared to what was obtained running at slower speeds.

The Drying of the Sheet

Mr. Cox stated that the drying of the paper, without a doubt, plays a very important part in the production of a well sized sheet, but there are widely varying opinions as to what the proper drying conditions are. Some believe the highest dryer temperature should be at the wet end, others think it should be at the dry end with a gradual rise as the paper loses its moisture. This latter is the more common opinion. Many of the ideas on the effect of drying on the sizing are still a matter of speculation and the events in one mill that might tend to support one idea, might be entirely opposite in another mill.

Calendars

The calendars, as such, can have very little effect on the sizing, but the using of calendars to secure a water-finish on the sheet does to some extent effect the sizing already in the sheet. This is mostly physical



GEORGE H. BROWN
First Vice Chairman

saponification number and acid number. Variations in rosin are not as great as they were formerly since large scale production of sizing has been designed to average out these inherent variables in the crude rosin.

The alum used commercially is quite uniform although variations occur which might affect the sizing.

The Jordan's Effect

The effect of the jordan on sizing is thought to be largely mechanical and might be explained by one of the theories of sizing where the fibres are considered to be coated with the sizing precipitate. Drastic brushing might loosen up the attachment of this coating. This is not a common problem, but excessive jordaning has been found to



GEORGE CROPPER
Second Vice-Chairman



R. C. ONKELS
Third Vice-Chairman

in changing the surface of the paper and so effecting the customary size tests on that paper. The running of the paper wet in order to get a higher finish on the stacks is apt to be the cause of the low size test rather than the effect of the calendars themselves.

Summing Up

Mr. Cox stated that, "In attempting to follow the progress of this paper through the mill and point out a few of the conditions which might have a possible effect on the production of a well sized sheet, I have not stressed these conditions in their relative importance, but this relative importance is well known to all of you. A consideration of these conditions will establish the sizing process as one intimately bound up in the whole process of paper making, and not merely a simple detail which is incidental to the operation of a paper mill. My main purpose here has been to make you all a little more conscious of all the details which contribute to the production of a well sized sheet of paper, and conscious of the fact that while it is necessary to use the best possible materials for sizing, and the best possible beater room technique, there are other conditions in the mill which will need watching. This will also apply to the pulp men, as there is a quality in the pulp which will allow it to be sized either very easily and efficiently or with great difficulty, and this quality has always in the past been overlooked in the endeavor to get good color, strength, bleachability and cleanliness, and yet what we might call sizability is of considerable importance

to the paper maker. There is a chance for some very good research work by the pulp mill chemists along this line."

Discussion

Mr. J. G. Ramsey, superintendent of the Everett Pulp & Paper Company, remarked that the time when the size and alum should be put into the beaters was always a point of argument, but in his opinion it doesn't matter when the size is added. He said that his early training had been in a mill where sized or colored stock was never left in the stock chests over week end shut-downs, because of the operator's belief that the sized and colored stock should not be left in the wet stock very long before being made into paper. He said this practice had always stuck with him.

Mr. Ramsey said that size can slow stock, but he didn't believe it could free the stock. When a stock is hydrated so it will hold water it will also hold size and that is the right hydration.

pH does not affect sizing as much as is commonly thought, according to Mr. Ramsey. He said that his own tests had proved the backwater was acid, due to some acid being released during the combination of the alum and rosin size. He said this was the reason for the pH in the backwater being lower sometimes where size was used than in the same stock with no size but with the same amount of alum. Mr. Cox agreed with Mr. Ramsey that pH was overworked in some mills.

Mr. Boyce asked Mr. Cox why rosin cannot be made white instead of yellow. Mr. Cox replied that they were dealing with a material that naturally had color and that as yet there was no economical method of bleaching or getting rid of this color. As it seemed that the paler grades of rosin did not make very good size, the rosin grades had to be chosen to get the best sizing efficiency and still obtain as white a precipitate as possible, that about a "G" gum rosin was thought to give a precipitate with alum which was as white as the normal bleached sulphite.

Mr. George H. Brown, superintendent of the Inland Empire Paper Company, said that he was of the opinion that size effected color and that it was at times necessary to change the dye formula to get the same color when the sheet was more heavily sized. Mr. Cox replied that his people were working on the effect of size on color, but were starting with a colored ma-

terial, rosin, and that there were also possibilities of other reactions taking place between the sizing materials and the dyes.

Mr. H. A. Des Marais stated that in his opinion size did effect the color of the sheet and that formulae had to be changed at times to obtain the same color.

Riffling

Mr. W. Norman Kelly, superintendent of the pulp division, Weyerhaeuser Timber Company of Longview, presented a paper on "The Influence of Consistency and Velocity of Riffling". This is the result of experiments carried on in the Weyerhaeuser pulp mill to obtain accurate data on riffling. Mr. Kelly stated that as they were faced with increasing production and as the riffling area was fixed they wished to make full use of the riffers already installed, so decided to make complete study of the factors effecting riffling. His paper is printed elsewhere in this issue. The discussion was limited to questions which were largely explained by amplification of statements already in Mr. Kelly's paper.

Luncheon

The Saturday luncheon, attended by the ladies at the meeting, was made enjoyable by solos from Mrs. R. W. Simeral and Mr. James G. Ramsey. H. A. Des Marais led the entire group in singing popular songs.

H. R. Heuer as chairman of the Pacific Coast Division introduced Mr. Ramsey who in turn introduced the guest of honor, Mr. Fred C. Boyce of Wausau. At the speakers table with Mr. Boyce sat Mr. & Mrs. A. D. Wood, H. A. Des Marais,



H. A. DES MARAIS
Secretary-Treasurer

Mr. & Mrs. H. R. Heuer, Mr. & Mrs. J. R. Ramsey, Mrs. Fred Shaneman and H. A. Vernet.

Afternoon Session

In the afternoon the first paper was by R. E. Chase, chemical engineer of R. E. Chase & Company, Tacoma. Mr. Chase spoke on "Alloy Pipe and Fittings for Sulphite Digesters." Mr. Chase began his paper by saying that he made no pretensions of knowing all about alloy steels in the sulphite industry, but that he was presenting data obtained through the selling of corrosion resistant equipment for a dozen years, and that the purpose of his paper was to stimulate discussion of the problems and their solutions.

"We will all admit," said Mr. Chase, "that stainless steel is coming and copper and bronze are going out as far as sulphite digester equipment is concerned. Copper and bronze corrode away and dissolve too quickly, especially for the new circulating systems.

"While copper and bronze fittings and pipe are bad enough in an all copper and bronze system, they are a whole lot worse in a mixed system of part copper, bronze and stainless steel. This is because steel and iron precipitate copper out of solution and the iron goes into solution to take the place of the dissolved copper. The result is that stainless steel pipe and fittings, particularly the expensive inside polished tubular heaters and coolers, acquire a scale of copper oxide and sulphide which interferes with their performance and shortens their life."

At this point Mr. Chase exhibited samples of side relief steel tubing which had been in use for two years in a Coast sulphite mill. Black scale was clearly evident on the inside.

Mr. Chase stated that "analysis shows this scale to be principally copper oxide and copper sulphide and sulphate with a little calcium. It must be assumed that some of this scale came loose and got into the pulp.

"Therefore we want to get rid of copper entirely and use stainless steel exclusively. The questions are, what kind of stainless steel and how can we use it. These are big questions.

"It is not quite so serious in the matter of cast parts. The KA2MO castings made by Electric Steel Foundry in Portland as far as I have heard, made an enviable record for themselves. So also have Misco "C" castings, made by Michigan Steel Casting Company, and the Duriron Company's KA2SMO and



FATHER AND SON

A. D. "Dad" Wood, superintendent Shaffer Pulp Company, and his son E. P. Wood, of the Pulp Division, Weyerhaeuser Timber Co.

their Durimet, which is in a class by itself when conditions are such that sulphuric acid and sulphates are present in addition to sulphites.

Cast Pipe Expensive

"But cast pipe is expensive. The pressure in a digester system is comparatively low, so that thin walled rolled or drawn tubing would seem to be indicated. We have been recommending No. 16 gauge tube in 2-inch sizes, No. 14 gauge tube in larger sizes up to 3½ inches, No. 12 gauge tube in 4 inches and No. 10 gauge tube in 6 inches and so on. These gauges are more than ample for the pressure and also to give the necessary stiffness to the tube.

"Furthermore, in these comparatively light gauges, stainless tubing gets down in price per lineal foot to a point where it is on an equal basis with extra heavy copper and beats the copper on the basis of cost per year. Stainless steel is so strong and corrosion resistant that light gauges are satisfactory. The only reason copper is used in extra heavy weight is so that it will take longer to dissolve in the acid.

Only Few Satisfactory Steels

"But there are only a comparatively few analyses of alloy steel which are suitable for the manufacture of thin walled tubing for digester service." At this point Mr. Chase stated that he, personally, was not convinced that titanium bearing steels were as yet satisfactory for digester service, although some were sold on the basis of their ability to be flanged and welded without heat treating afterwards. He stated he had this titanium alloy to sell, but did not recommend it.

"We are," said Mr. Chase, "still sticking to KA2S and KA2SMo. These are both the well known 18% chrome, 8% nickel, very low carbon steels, the Mo variety of course con-

taining molybdenum. Both of these alloys are available in the form of welded tube. Unfortunately both of these alloys should have heat treatment after welding or flanging to get the best results.

Mills Want Quick Service

"When sulphite mills want a piece of tubing they want it right now. Their needs are seldom anticipated in advance. Nor do they know the size or length until they must have the tube. They cannot, obviously, wait for a distant steel mill to produce what they want. As a result copper is usually used as a replacement until the desired piece of steel tube can be obtained.

"To solve this problem the Misco Compression Fitting was developed and is working out very well." Mr. Chase exhibited a sample fitting and showed how it worked.

"It is now possible for the sulphite pulp mill to buy stainless tubing in standard mill lengths and saw off the length needed for a replacement job. The joint is made with these compression fittings without flanging, welding or heat treating, and no more delay nor expense than a copper job."

Mr. Chase pointed out that flanged stainless tubing often caused trouble due to corrosion of the flange and to flaws in the metal, caused by flanging and welding. He showed examples of flange corrosion. The compression fittings, he stated, have avoided this trouble.

Choosing the Proper Alloy

Mr. Chase went on to say, "We now come to the question of choosing between KA2S and KA2Mo. In tubes the latter is 30% more expensive. Is it worth the extra cost? I don't know. Our present position is to recommend KA2SMo tube for expensive and complicated pieces of equipment such as heaters, coolers

and evaporators, particularly if they have inside polish. We also recommend them for all oxidizing conditions. But for ordinary digester piping I am still sticking to KA2S. At least it lasts long enough to give the operator his money's worth. And if it fails after a period of years, he can pull it out, cut off the defective section and place the rest back in service again by employing the compression fitting.

"However, as more data becomes available we may revise this opinion. We are trying to keep open minded. We would be glad to sell the more expensive material if we could be sure it was justified."

Mr. Chase asked for data on copper scale, whether everybody finds it on the inside of stainless tubing when copper is used somewhere in the system. He asked what the opinion was as to the destructiveness of the scale. He stated that it might possibly be protective of the stainless beneath. Also Mr. Chase asked if when the scale is taken off whether the tube is still as resistant as before to corrosion. He asked for information on the behavior of KA2S and KA2SMo in systems where no copper or bronze is used to form scale.

Welded Versus Seamless Tubing

Mr. Chase spoke in favor of welded stainless tubing saying that of a very large amount of welded stainless tubing sold by his company to sulphite mills on the Pacific Coast only one piece of old-fashioned KA2 had developed one pin hole. "It was originally sold for No. 12 gauge," Mr. Chase stated, "and it is still over No. 12 gauge after two years of tough service in side relief. There was only one bad place about as big as a thumbprint, and that was on the side opposite from the weld. That is not a bad record for Carpenter welded tubing." Mr. Chase exhibited a piece of the tube that had developed one pin hole leak, saying that the weld was just the same as when it was new.

Mr. Chase stated that seamless stainless tubing cannot yet be made from KA2SMo alloy, but a welded tube can be made from this type of steel and is being satisfactorily employed in a number of sulphite pulp mills today.

Recommendations

"If I were building a sulphite pulp mill today," said Mr. Chase, "I would pipe the digesters with KA2S welded tubing. I would use one of the recognized brands of alloy fittings and valves. I would make the heaters and coolers of pol-

ished, welded KA2SMo tubing. I would put in a stock of KA2S thin walled welded tubing in 20 foot lengths, and a stock of Misco Compression Fittings so that whenever a change was necessary it would be made at once without waiting for the tubing to be made."

Mr. Chase stated that he recognized many statements in his paper were controversial and he hoped both thought and discussion would be stimulated.

Discussion

A number of questions were asked Mr. Chase and the discussion following brought out that one mill had made exhaustive tests on various stainless alloy piping, cast, centrifugally cast, welded plate and welded tube, together with seamless tube. The results so far showed that the alloy KA2Mo was satisfactory in any of the above forms.

"A Timely Warning"

The second paper of the afternoon was prepared by Mr. Otto C. Schoenwerk, pulp and paper mill engineer, and was read by chairman H. R. Heuer, as Mr. Schoenwerk was unable to attend.

Mr. Schoenwerk called attention to the possibility that the construction of the Bonneville Dam on the Columbia River might kill off the greater portion of the salmon run due to the inability of the salmon to get above the dam to spawn. He warned the industry that the pulp mills on the Columbia might be blamed for this failure of the salmon through no fault of their own, and urged they take an active part in formulating plans for the construction of sufficient ladders and fishways to permit the salmon to get over the dam. He presented his point in a unique manner, calling it an item in a newspaper of 1940 telling of a meeting of the pulp mill people to discuss ways of averting threatened shutdown of their plants by action of the fishermen who were blaming the mills, while the dam was really at fault.

The Institute of Paper Chemistry

Dr. G. H. McGregor, who became affiliated with the technical department of the pulp division, Weyerhaeuser Timber Company, a short time ago, after having been instructor in pulp and paper technology at the Institute of Paper Chemistry of Lawrence College in Appleton, Wisconsin, described the purposes of the Institute in interesting detail.

The Institute was conceived in 1929 by Dr. Henry Wriston, president of Lawrence College, and Mr. Ernst Mahler of the Kimberly-Clark



DR. GEORGE H. MCGREGOR
Described the Institute of Paper
Chemistry

Corporation, for the purpose of training men for the pulp and paper industry. It is the only training school of its kind in the United States and one of three in the world, Dr. McGregor told the superintendents.

Dr. Otto Kress was selected as technical director and the Institute opened with three students, the work being done in small quarters under the roof of the college gymnasium. Only a few pieces of equipment were at hand to begin with.

In the Institute's second year the idea of training men for the pulp and paper industry spread rapidly and money was secured for the construction of a separate building. Most of the equipment was gladly donated by equipment manufacturers, who exhibited much interest in the aims of the Institute.

The work is primarily educational. Only graduate students are accepted. Two degrees are offered, Master of Science in Chemistry and Doctor of Philosophy in Chemistry. The former course requires two years work and the latter four years of study. The curriculum is divided broadly into two divisions, pulp and paper manufacturing and pure science or the chemistry of pulp and paper making.

Dr. Otto Kress gives the fundamental course in pulp and paper manufacturing. A complete course in the use of dyestuffs is taught. Pulp and paper testing is another important subject. Fibre microscopy is another vital subject studied. The course in wood technology includes the fundamental studies of pulpwoods. Pulp and paper mill engi-

neering is not only a classroom course but also includes practical mill work in the plants adjacent to Appleton.

Studies in chemistry include work on cellulose, lignin and advanced colloidal and organic chemistry.

The Institute of Paper Chemistry is supported by the industry throughout the country.

Benefits to the Industry

Dr. McGregor pointed out that the value of the Institute in the first place is largely intangible for its primary purpose is the training of men in the knowledge of pulp and paper making. Through the work of its graduates the Institute contributes to the progress of the industry.

The material benefits to the mills includes a complete monthly abstract of all articles published throughout the world on the subject of pulp and paper; a quarterly technical bulletin; and, semi-annual meetings of men in the industry to discuss technical problems of making pulp and paper.

The library is probably the most complete in all the industry. More than ninety periodicals devoted to pulp and paper in all parts of the world are subscribed to.

About forty students are attending the Institute of Paper Chemistry at present.

Beating

Mr. Henry C. Reimer of the Hawley Pulp & Paper Company at Oregon City, Oregon, delivered a talk on "Dyeing and Beating Problems".

Emphasis was placed on the value of beating and Mr. Reimers remarked that insufficient attention was given to this department of the paper mill, where in his opinion good paper or bad is made.

Pacific Coast pulp was said to be the best, but it presented different problems of beating than pulp made from Eastern and Middle Western woods.

Mr. Reimers advised that young men entering the industry be placed first in the beater room to learn this phase of the business, for he considers it the fundamental education of a paper maker.

Nominations

A report of the nominating committee, James G. Ramsey, chairman, Uno G. Fryklund and Arthur Zimmerman, was received. For the Pacific Coast Division's second year officers the committee nominated the men named at the beginning of this article. Mr. T. J. Beaune, superintendent of the Fibreboard Products Company, Port Angeles, moved that the nominations be accepted and the vote was unanimous.

It was voted that an executive committee be appointed to assist the officers in planning future meetings. The committee will be appointed later.

The Ladies Were Entertained

Mrs. Fred C. Shaneman, in charge of ladies entertainment, held a tea Friday afternoon at her home adjoining the Tacoma Country and Golf Club. Saturday afternoon while the men were in business session a bridge tea was held in the presidential suite of the Hotel Winthroy. Prizes were awarded to the winners at each table, Mrs. Arthur W. Berggren, Mrs. G. H. McGregor and Mrs. W. L. Beuschlein.

Those in Charge

Arrangements for the successful convention were in charge of Fred C. Shaneman, chairman; W. W. Griffith, A. D. Wood, Tom Moffitt, A. H. Hooker, Jr., and Brian L.

Shera. The ladies entertainment was arranged by Mrs. Fred C. Shaneman, chairman; Mrs. Arthur W. Berggren and Mrs. Tom Moffitt.

Mr. Ralph Shaffer acted as master of ceremonies at the reception Friday evening which was arranged by Mr. Tom Moffitt. A group of companies serving the pulp and paper industry of the Pacific Northwest were the hosts at the reception to the superintendents and their wives.

Attendance Good

As many did not register the following list does not give a true picture of the actually large attendance at this third meeting of the Pacific Coast division of the superintendents' association.

THOSE WHO REGISTERED

Fred C. Boyce, J. V. B. Cox, George Cropper, John Kiely, Mr. & Mrs. A. D. Wood, E. P. Wood, Mr. & Mrs. T. H. Beaune and daughter, Mr. & Mrs. Uno G. Fryklund, Arthur Zimmerman, Mr. & Mrs. W. Norman Kelly, Dr. & Mrs. G. H. McGregor, Mr. & Mrs. R. T. Petrie, W. J. McGinnis, George W. Brown, H. A. Vernet.

John E. Hassler, Dan Charles, Mr. & Mrs. R. N. Simeral, F. J. Reynolds, Mr. & Mrs. Kenneth Hall, Mr. & Mrs. R. P. Lundgren, Mr. & Mrs. T. J. Waltmon, Mr. & Mrs. A. W. Berggren, J. N. Somerville, Dr. & Mrs. W. L. Beuschlein, Mr. & Mrs. H. R. Heuer, Mr. & Mrs. Ray Hansen, Mr. & Mrs. C. E. Ackley, H. S. Griggs.

Mr. & Mrs. Fred Shaneman, H. A. Des Marais, J. W. Martin, Mr. & Mrs. Walter S. Hodges & daughter, Bernard Huller, Leonard McMaster, Mr. & Mrs. T. E. Moffitt, E. G. Swigert, Mr. & Mrs. R. C. Onkels, A. H. Hooker, Jr., A. C. Dunham, Sigurd Norman, Mr. & Mrs.



A group of those who attended the third meeting of the Pacific Coast Division, American Pulp & Paper Superintendents' Association, Tacoma, Washington, December 7th and 8th, 1934.

E. F. Clark, W. D. Jarres, Mr. & Mrs. R. E. Chase, Mr. & Mrs. Roy Carey, John Owen, Mr. & Mrs. Lawrence K. Smith, Mr. & Mrs. Harlan Scott.

W. L. Ketchen, Mr. & Mrs. Harold Cavins, Mr. & Mrs. J. G. Ramsey, John H. Carlson, A. W. Stegman, A. F. Winklesky, G. V. Smith,

Mr. & Mrs. A. S. Viger, Brian Shera, Arthur M. Mears, Mr. & Mrs. T. J. Bannan, Tom Shields, Mr. & Mrs. R. S. Painter, Mr. & Mrs. R. M. Osborn, C. P. R. Cash, Mr. & Mrs. Scott Henderson, Mr. & Mrs. Ralph Shaffer, Thad Stevenson, R. V. Bingham.

LONGVIEW FIBRE EXPANDS PLANT

Mr. R. S. Wertheimer, resident manager, announces that the Longview Fibre Company is adding to its facilities a warehouse containing approximately 15,000 square feet for the storage of raw materials and finished products. Adjacent to the warehouse a new breaker beater and accessories are being installed which will permit of more convenient handling of re-pulped trim from the company's converting operations. The new breaker beater installation will also be available for handling selected paper stock in the event the company at any time decides to introduce lines of container board or boxboard in which paper stock is an important raw material.

The Longview Fibre Company's present production of container board is based on virgin pulp and it

is not its intention to change its product. However, in an emergency such as existed during the recent longshore strike when movement of logs and operation of sawmills were suspended, the new installation will provide a form of insurance for continuity of operation.

The breaker beater will have a capacity of seventy-five tons and is now being constructed by the Dilts Machine Works of Fulton, New York. It will be completely installed late in February. The beater will be equipped with a combination patented perforated backfall and a patented perforated bedplate. The tub will be of cast iron and steel. A motor driven, self-dumping rag catcher will be provided. Auxiliary equipment includes screens, thickeners and settling troughs.

ST. LAWRENCE CHASTISED

The Quebec government has "cracked down" on St. Lawrence Paper Corporation for making contracts with Hearst and Scripps Howard newspapers for delivery of newsprint at the old figure in defiance of efforts of most newsprint producers to increase 1935 prices.

The provincial government of Quebec has deprived the St. Lawrence company of the right to cut timber of a diameter down to 7 inches, and has withdrawn concessions previously made in the form of reduction in stumpage dues and royalties. This action undoubtedly will increase the company's wood costs if cutting is done on their own limits. The government has warned independent pulpwood operators to prevent the St. Lawrence company from securing wood supplies from other sources on the same basis as other newsprint mills. Any operator who sells wood to St. Lawrence will suffer the same penalty already applied to St. Lawrence in regard to stumpage dues and royalties.

Quebec's action is justified by Honore Mercier, minister of lands and forests, on the ground that it is in the general interest of the province, in order to protect the working classes and prevent ruin of the industry.

CANADIAN INTERNATIONAL REPORTS LOSS

In a letter to stockholders, International Paper Company states that operations at its Canadian mills last year showed a loss. Before charging any interest at all on the investments, before even interest on bank loans, earnings on the company's investment at \$77,447,000 were less than nothing. Net loss before interest on 1933 operations was \$417,967 and for the first nine months of 1934 the loss was \$500,370.

Cost of the company's woods operations has been increasing. So far this year the company's Canadian mills have been using wood cut last year, on which labor costs were considerably less than they will be this year.

WASHINGTON RANKS THIRD IN PULP PRODUCTION

The state of Washington ranked third in pulp production in the United States during 1933, according to Federal figures, being surpassed only by Maine and Wisconsin. Washington pulp had a value of \$11,433,505.

SANDWELL TAKES OVER ENGINEERING FIRM

Mr. P. Sandwell, formerly with the Powell River Company, has taken over the engineering practice of Frank Sawford, which was established in Vancouver, B. C., fifteen years ago. The new firm name is Sawford and Sandwell. Officers are at 510 Credit Foncier Building, Vancouver, B. C.

Mr. Sandwell intends to develop the firm's engineering practice principally along pulp and paper mill lines. Mr. Sandwell is a member of A. M. E. I. C. and TAPPI, and is a registered professional engineer in British Columbia.

BEHREND AND WILSON ON COAST

Ernest Behrend, president, and Norman Wilson, general manager of the Hammermill Paper Co., were on the Pacific Coast from Erie, Pa., in October and November and spent a week at their Hoquiam plant. Later they visited in San Francisco and sailed for home aboard the steamer "Santa Paula" via the Panama Canal.

WEST LINN MAKES IMPROVEMENTS

A new river wall 380 feet long and 22 feet high has recently been completed at the West Linn, Oregon, mill of the Crown-Willamette Paper Company, together with a bridge across the canal to carry pipe lines.

The 6,000,000 gallon filter plant now under construction will soon be completed on the bluff above the mill.

SPAULDING MAKING A PROFIT

According to a statement by J. C. Compton, president of the Spaulding Pulp & Paper Company, Newberg, Oregon, the company made a profit during its first six months of operations this year, without allowing for depreciation.

The directors of the company, said Mr. Compton, aim to operate the plant without losing money, but if it should go in the red, it will probably be closed, as the stockholders do not feel justified in advancing further funds.

HAWLEY REORGANIZATION PLAN APPROVED BY FEDERAL COURT

Reorganization of the financial structure of the Hawley Pulp & Paper Company of Oregon City under the recently amended bankruptcy act was approved by Federal Judge John H. McNary today. The plan was submitted with assent of the majority of the owners of securities of the company.

Records show the company has assets totaling \$8,180,851. The financial structure has \$2,127,500 bonds outstanding, a note for \$500,000, 20,000 shares of first preferred stock, 8000 shares of second preferred stock and about 40,000 shares of common stock. Seventy-four per cent of the bondholders gave their assent to the plan; all of the note holders approved; 77 per cent of the first preferred stock holders, 93 per cent of the second preferred stockholders and 87 per cent of the common stockholders have assented.

The amended law provides for reorganization under court approval when two-thirds of the creditors and stockholders approve the plan submitted.

Under the plan bonds will receive first payment from earnings, with a guaranteed payment of at least \$200,000 a year. The plant is to be maintained in operating condition and \$500,000 current net assets kept on hand at all times. The first preferred stockholders have waived interest and dividends until January 1, 1938, and holders of the second preferred until January 1, 1939.

The reorganization provides for conduct of the company's business by a directorate consisting of four members elected from the bondholders, one from the note holding group and one each from the group of first and second preferred stockholders.

ESTABLISH UNIVERSITY OF IDAHO RESEARCH FELLOW- SHIPS

Two \$400 Fellowships have been given to the School of Forestry, University of Idaho by Potlatch Forests Inc., Lewiston, Idaho. These awards are made for the purpose of studying the chemical utilization of wood and the chemical plasticity of wood.

Potlatch Forests Inc. is the largest lumber company in Idaho and is a Weyerhaeuser organization.

The Fellows were selected by Dean R. E. McArdle of the School of Forestry, and are Leslie L. Larson of Blackfoot, Idaho, who graduated from Idaho in June, 1934, and Joseph L. McCarthy, of Spokane, Washington, a 1934 graduate of the University of Washington.

The fellowships will be under the direction of Dr. E. C. Jahn, associate professor of forestry, in charge of the Wood Conversion Laboratory, and a member of the Technical Association of the Pulp and Paper Industry.

BILL WILLIAMSON VISITS LOS ANGELES

Bill Williamson of the Shuler & Benninghofen Co., left Portland December 5 for Southern California, calling on his friends at the local mills.

EXPECTS BETTER BUSINESS

No. 1 machine of the California Fruit Wrapping Mills, Pomona, Calif., was shut down for a couple of weeks last month, but was started up again December 3, and the plant is now running at full capacity.

The orange crop in the vicinity is very good this season, both in quality and quantity, and if prices continue to hold up well, a successful season is anticipated by growers. This will naturally mean good business for the wrapping mill, and the executive staff is looking forward to continued improving business.

JOIN COAST TAPPI

W. A. Prier, president of the Oregon Brass Works of Portland, Oregon, has become a member of TAPPI. Mr. Prier's firm has manufactured bronze and brass castings for the Pacific Coast industry for many years.

Another new member of the Pacific Section of TAPPI is Albert H. Bowen, research chemist with I. F. Laucks, Incorporated since 1927. Mr. Bowen studied chemistry at the University of Washington before joining the Laucks organization.

C. E. KINNE RETURNS TO BAGLEY & SEWALL

At a directors meeting late in November Clarence E. Kinne was elected a vice-president and director of Bagley & Sewall Company of Watertown, New York. Mr. Kinne, who is well known throughout the pulp and paper industry as an experienced engineer in the manufacture of paper mill machinery, left Bagley & Sewall in the spring of 1933.

Two other new directors were elected, Jean R. Stebbins and A. T. Ten Eyck. The present officers of the company are, Charles W. Valentine, president; E. S. Lansing and C. E. Kinne, vice-presidents; C. L. Thompson, treasurer, and Harry C. Kinne, secretary.

DOYLE JOINS VERNON STAFF

John Doyle is a new chemist at the Vernon, Calif., plant of Fibreboard Products, Inc. He is a graduate of the University of Oregon, and was formerly connected with the Grays Harbor Pulp & Paper Co. In coming to Los Angeles, he is returning to familiar ground, it being his home town. Mr. Doyle's father operates the Doyle Packing Co., not far from the Fibreboard plant.

CAMAS PAPER SCHOOL BEGINS NEW TERM

Crown-Willamette's Paper School at the Camas plant began the 1934-35 term on November 14th and 15th. The course given last year in general instruction in pulp and paper mill operation, converting, office practice and management procedure proved so popular with the employees that it is being repeated again.

In addition an advanced course will accommodate last year's students in a further study comprising a closer inspection of a few key

operations of wood preparation, pulp processing and paper machine operation.

Sessions will be held for a fifteen week term. Guest lecturers, prominent men in the Pacific Northwest industry, will strengthen the program, adding the interest of points of view outside the local mill.

Mr. A. G. Natwick, assistant mill manager, is again dean of the Paper School, and Mr. W. R. Barber of the technical department is the principal.

TAKING THE BARKER INTO THE WOODS

Squaw Mountain Timber Company Has Unique Pulpwood Operation
At Estacada

ESTACADA, Oregon Ginseng patches on the hill-sides up the Roaring River road to the Squaw Mountain loggers camp a mile out a plank truck road the high, whining whisper of knives biting into green wood, drifting through the tree tops louder the sound a fully rigged spar tree under it the barker, a new wrinkle for loggers of the Pacific Coast . . . faster go ones feet, hurrying to see this new development.

And fast will go the feet of many loggers, in many districts, for here is a simple and practical means of turning logging waste into usable pulpwood, of creating jobs, of turning material which has been useless into pulp and paper.

The Squaw Mountain Timber Co. conceived the idea, and now the portable woods barker has been tested in actual operations for some weeks, has proved that it will turn out a great deal of pulp wood, fully barked, and offers a most interesting possibility to both the loggers in mixed stands and to the pulp and paper mills. There are still problems to be solved, technique to be mastered, but the loggers who, in the past, have handled only long logs, are most enthusiastic over this method of converting logging waste into a good, marketable product.

The Squaw Mountain Timber Company, of Portland and Estacada is a new logging operation, headed by Anton A. Lausmann, who managed the East Side Logging Company for a number of years. Its operations are adjacent to the Mt Hood National Forest on the Roaring River road running up and over Squaw Mountain. The timber stand is typical of so much of the Douglas fir area; an overstory of large Douglas fir and a heavy under-story of hemlock and some white fir. The land where logging is now going forward is rather level, with easy slopes and the total stand is heavy. There was a market for

only part of a hemlock and so it was decided to try cutting it into pulp wood, barking it in the woods and trucking the wood to Estacada for loading.

Getting Out the Wood

From 25 to 30 men are employed in cutting the wood to four foot lengths in the woods. There the wood is ricked adjacent to roads which thread the logged off land adjacent to the spar tree. Three teams are employed to skid the wood, a half cord at a time, on racks to the barker. **EVERY-THING IS TAKEN DOWN TO A FOUR INCH TOP.** At first some round sticks were brought in, but now only split wood is used. It takes too long to bark the round sticks. Anything is taken that will make 9x11 four feet long. Of course the high grade hemlock logs are logged along with the fir.

No exact records have been kept as to the amount of wood secured per acre, but it is substantial. Tops of trees which have supplied logs, also are worked up. The men working on the job are of the opinion that a hemlock tree made up into pulp wood will yield about twice as much usable material as the same tree cut into sawmill logs.

The Barker

The barker may be located at any convenient point. At the time of the visit by Pacific Pulp & Paper Industry it was adjacent to the spar tree used to log one setting, going out probably not more than 1,500 feet. Manufactured by the Hesse-Ersted Iron Works, the machine is a portable adaption of the slab barker developed by this company. In this particular installation the power plant is the motor from an old lumber carrier, using somewhere around 25 gallons of gasoline in 8 hours. Diesel or gas power is equally suitable. The hook up from the power plant is by means of a short belt, running a shaft on which are mounted six slab barker

heads. Chips are carried away by a section of 78 chain equipped with flights.

At present the waste bark and chips are disposed of by two wheelbarrows and one man. The waste is simply dumped into the wheelbarrow sitting under the end of the chain and wheeled away and dumped. Other methods could be employed. The conveyor could be extended and the waste dumped into a refuse burning pit; the conveyor could dump the refuse into a flume, which would discharge the waste upon a hillside, or a portable hog could be installed in some locations, grinding the refuse into hog fuel.

Speed of Heads

There are six heads on a shaft. This number could be increased or decreased, to suit the desire of the operator. At each head, which runs at 3,600 r.p.m., a man is stationed. Behind him is the unbarked wood. A stick at a time is shoved back and forth across the head, rotated slowly, striking a 3x12 bumper which keeps each stick from going too far forward. The stick is then reversed, end for end, and the bark from the remaining one-third is removed. The operator then tosses the stick outside to a barked wood rack.

Readily Moved

The output of the barker will depend upon the way in which the wood is split, the more nearly flat the piece, the more quickly the bark can be removed, the skill of the operators and the wood supply. The machine is now turning out between 20 and 25 cords in 8 hours, the daily average gradually creeping up. Mr. Jameson, who is in charge, believes that an average daily output of 30 cords can readily be reached. A supply of unbarked wood is stacked back of the barker. Thus if for some reason wood does not come in promptly from the woods, the machine, by means of a drum on the engine end, skids it-

self along. For short moves the barker will move itself just as a donkey will move, or it can be skidded by a tractor, or, in case of a long move, it can be loaded upon a truck.

The barked wood, in racks, is stored along the plank road. These racks are skidded by a gas donkey kept handy for that purpose. Two light trucks are employed to haul the wood to Estacada, where it is loaded on cars and delivered to Hawley Pulp & Paper Co., Oregon City, Ore. These trucks are loaded and unloaded by hand.

The entire barker crew consists of from 35 to 40 men. The number fluctuates somewhat because in some locations less work is required in the woods to make wood than in other locations. Each operator at noon whets down the knives on the head he is operating, while a spare set is carried in case in case of need. For grinding a small emery wheel is mounted on one end of the barker shaft. It only takes a moment to connect a belt, so that a hurry up job of grinding can be done if needed.

Tractor Logging

Logging is done with a tractor, the maximum haul being about 1200 feet. Most of the skidding is downhill. The timber is rather large Douglas fir long bodied and sound. So far as possible the load is being held down to 3500 feet. The logs are loaded on trucks and taken to Estacada where they are loaded on flat cars and taken to the Columbia River log market. This summer when the operation was going at full speed the output of logs averaged 150,000 feet a day.

PACIFIC MILLS REPORT BETTER BUSINESS

John H. Young, manager of Pacific Mills, Ltd., Vancouver, B. C., reports business has picked up considerably during the past month, with prospects good for the coming year as a result of price stabilization. "The increased price of newsprint is pretty small when considered in relation to our increased cost of operations, but it is a step in the right direction," said Mr. Young. "We at least have started on the way up."

LAWRENCE KILLAM

Lawrence W. Killam, president of B. C. Pulp & Paper Company, has been spending some time during the last month checking up on conditions at his two mills at Woodfibre and Port Alice. Both mills are operating full time.



OPERATING VIEWS OF SQUAW MOUNTAIN TIMBER CO.

1. Logging waste from which pulp wood is secured. 2. Ricked pulp wood awaiting transport to barker. 3. Outer end of barker with grinding wheel. 4. The barker crew at work.

THE INFLUENCE OF CONSISTENCY AND VELOCITY ON RIFFLING*

By W. NORMAN KELLY

Superintendent, Pulp Division, Weyerhaeuser Timber Co.,
Longview, Washington

THE purpose of this paper is to describe some investigations which were made to determine those factors which influence the riffling of sulphite pulp. The actual conclusions reached in the particular cases which will be described may not fit the conditions found in all mills, but the method of reaching these conclusions can be used to determine the best conditions for riffling any stock.

The pulps tested were of three kinds. One was a fairly hard unbleached sulphite of approximately 5% chlorine bleachability. This pulp was passed through rotary knotters with 1/4-in. perforations before riffling. The second was a softer, shorter fibred sulphite with a chlorine bleachability of approximately 2.75%. This pulp was also passed through the knotters mentioned above prior to riffling. The third type of pulp was a fairly hard, bleached, washed sulphite with an original bleachability of 5% chlorine. This pulp might be further described as a bond type pulp.

The riffler used to determine the ideal riffling condition was of the standard felt-lined type. At the inlet end of this riffler, five baffle boards were installed so that any large particles of dirt might be removed before coming in contact with the felt. The unbleached pulps were tested on a riffler, the felt covered length of which was 82 feet, and the width 7 ft. 1 in.

The bleached pulp was tested on a riffler having 82 lineal feet of felted length and a width of 8 ft. 9 in. Arrangements were made for varying the amount of pulp and/or water which could be fed to these rifflers and a weir was installed so that accurate flow measurements could be made.

It was felt that four factors should be investigated. These were:

- (a) Area per ton of pulp needed for efficient riffling.

*Presented at the third meeting of the Pacific Coast Division, American Pulp and Paper Mill Superintendents' Association, Tacoma, Wash., December 7 and 8, 1934.



- (b) Best consistencies for riffling various stocks at given productions.
(c) Maximum allowable velocity for any given production.
(d) Minimum time necessary for the separation of the dirt particles from the fibres, and the settlement of these particles on the riffler felt.

At the outset of the investigation, it was discovered that good riffling was obtainable only when a "dirt line" was found after the riffler had been in service for a normal period of time. This so-called dirt line was simply that point towards the discharge end of the riffler beyond which no dirt was observed to set-

tle. In other words, at certain consistencies and rates of production under which the observations were made, no dirt particles were found to settle out on the felt after the pulp and water had travelled a certain distance. A minimum length of riffler was thus indicated for each type of pulp. The practical application, of course, would be to install rifflers of sufficient length to effectively settle the dirt particles under the most adverse condition of stock characteristics and/or consistency.

After it was shown that a minimum length of travel was necessary to good settling, it was realized that once this length was determined the amount of riffling space needed could be expressed in inches or feet or riffler width of a certain definite length per ton.

Just before the investigations were started, new felt was laid in the test rifflers. Before each test the felt was thoroughly washed. A period of twenty hours was taken for each test in order that ample time could be allowed for examination and washing of the felt prior to each run.

Velocities were determined by timing the travel of corks through a definite distance. The velocities recorded are about twice as great as those obtained by measuring the actual volume rate of flow. This greater surface velocity is inherent in water flows of any character.

Typical results were as follows:

TABLE No. 1
For 5% Chlorine Bleachability unbleached pulp.

Consistency % A.D.	Dirt Line (Distance in feet from head of Riffler)	Surface Velocity (Feet per minute)	Rate of Production (Tons A.D. Pulp per ft. or Riffler width per day)	Remarks as to Riffling efficiency.
0.20	64'	91	1.43	Very good.
0.22	64'	86	1.46	Very good.
0.25	64'	92	2.08	Good.
0.28	64'	72	1.51	Good.
0.32	80'	88	2.42	Good settling towards tail end of Riffler.
0.39	No Dirt Line	52	1.41	Very poor settling.

TABLE No. 2

For easy bleaching sulphite pulp of 2.75% C1: bleachability.

Consistency % A.D.	Dirt Line (Distance in feet from head of Riffler)	Surface Velocity (Feet per minute)	Rate of Production (Tons A.D. Pulp per ft. or Riffler width per day)	Remarks as to Riffling efficiency.
0.26	76'	83	1.39	Very Good.
0.34	80'	60	1.41	Good.

TABLE No. 3

For bleached sulphite pulp of C1: original bleachability

Consistency % A.D.	Dirt Line (Distance in feet from head of Riffler)	Surface Velocity (Feet per minute)	Rate of Production (Tons A.D. Pulp per ft. or Riffler width per day)	Remarks as to Riffling efficiency.
0.28	73'	120	2.5	Good.
0.28	70'	130	3.0	Good.
0.32	76'	109	2.8	Good.
0.33	76'	100	2.5	Good.
0.36	82'	96	3.0	Fair (Dirt line very close to end of riffler)
0.38	None	87	2.5	Fair.
0.41	None	84	2.9	Poor.
0.42	None	94	3.6	Very poor.

Analyzing the results shown above it can be seen that the most important single factor in obtaining good riffling is to use a relatively low consistency. Depending on the type of pulp, poor riffling for that pulp was obtained whenever the consistency exceeded a certain value.

This was true no matter what the rate of production or velocity was within the limits prevailing during the tests. It has also been demonstrated that a certain minimum riffler length is essential to allow time for the dirt particles to settle out. And with this factor in mind, it can be seen that, depending on the character of the pulp to be riffler, a certain minimum width of riffler of the correct length is needed per ton of pulp to be treated.

Acknowledgement is made to the painstaking work of Mr. S. Hazelquist who carried out the tests and obtained the data on which this paper is based.

TYPE OF LEVEL RIFFLER USED IN ABOVE TESTS



BROWN INSPECTS PARAFFINE PLANTS

Harvey Brown, resident manager of the Vernon mill of Fibreboard Products, Inc., took enough time off last month to attend the California-Stanford game and to go through the Emeryville plant of Paraffine Companies while in the north.

ZELLERBACH VISITS VERNON PLANT

J. D. Zellerbach, president of Fibreboard Products, Inc., was at the Los Angeles (Vernon) plant of the company December 5, conferring with resident executives.

WHELOCK TAKES VACATION

F. H. Wheelock, plant chemist for Fibreboard Products, Inc., Vernon, Calif., expects to take his vacation around Christmas time, spending his time in decorating Christmas trees and other holiday pursuits.

B. C. CONTAINER BUSINESS IMPROVING

Demand for corrugated paper boxes has been well maintained during the last few months in British Columbia, and the coming year promises a marked upturn in business, according to V. J. Walsh, managing director of Canadian Boxes, Ltd., one of the busiest paper specialties houses operating in Vancouver, B. C.

C. H. Forster is general sales manager of this company, which is affiliated with Hygrade Corrugated Products, Ltd., of London, Ont. G. R. Sharpe is superintendent of the plant, and A. S. Morror, assistant superintendent.

Corrugated board is made from two distinct materials—one for the surface, which is supplied by Sidney Roofing & Paper Company, Victoria, and one for the corrugation, supplied by Pacific Mills, Ltd., at Ocean

Falls. The testboard, for surfacing, is shipped to the Canadian Boxes factory in 1,500-pound rolls. The corrugation material is handled in rolls about 1,000 feet to the roll and of various widths.

Canadian Boxes, Ltd., is primarily a producer of corrugated fibre board containers and does not concern itself with the wide variety of specialties that some similar plants do. Mr. Walsh points out that the demand for corrugated board has been such that his company has found it worth while to concentrate on corrugated board rather than branch out in other lines. This policy has, of course, contributed to economical operation, too, for the one big mechanical unit, the corrugator, dominates the whole factory. Capacity of the plant is equivalent to two carloads of variously-sized corrugated fibre containers daily. Forty men and women are employed.

CAMAS BUILDS NEW DOCK AND WAREHOUSE

A three story dock warehouse, 100 feet by 400 feet, will be erected immediately at the Camas, Washington, mill of the Crown-Willamette Paper Company, according to an announcement by Mr. George P. Berkey, vice-president of the company. The new dock warehouse will replace the present structure which has become inadequate to handle the storage and shipping requirements of the large Camas mill.

The building will be constructed in two units so there will be no interference with daily shipping. The first unit will be built at once and completed in June, 1935, and the second unit will be started after the June high water and will be finished next fall. Approximately one hundred and fifty men will be employed for a period of seven months.

The new dock warehouse will be of heavy mill type construction and will benefit the lumber industry in the Northwest. The structure will require 35,000 feet of piling, 1,750,000 feet of lumber, 1500 yards of concrete, 100 tons of steel, 50,000 square feet of roofing and two marine type elevators. Foundations will

be of piling capped with concrete, and the lower floor will be of reinforced concrete. Sprinkler systems will be installed throughout.

Plans were prepared by H. R. Simpson of the Crown-Willamette Paper Company with the collaboration of Mark R. Colby of the Colby Steel and Engineering Company of Seattle. Over a period of a year a number of studies were made having to do with this improvement and resulting in the completion of final plans and awarding of the construction contract to the Hoffman Construction Company of Portland.

The present electric tramway system throughout the Camas plant will be retained with certain alterations and improvements. All floors of the new dock will be served by the tramway system. The new dock warehouse will permit the storage under cover at one time of 35 freight cars loaded with mill products.

The Camas mill of Crown-Willamette is the largest plant of its kind on the Pacific Coast and one of the largest in the United States making paper specialties.

CARLSON OPTIMISTIC OVER BUSINESS

"Trade seems to be encouraged and things are looking up all through our business structure," said A. E. Carlson, head of the board division of the Pioneer-Flintkote Co., Los Angeles, recently. "The big department stores are optimistic, are doing a big business, and naturally will be buying more boxes—which, of course, interests us."

The company is adding to its payroll, and is developing new lines of boards and building up special items. They are now putting special finishes on boards for certain processes, such as to prevent excess ink absorption, and to develop brighter and richer colors from the ink used.

SHERA PROUD FATHER OF SON

Brian L. Shera, Jr., is the name of the seven and three-quarter pound son born December 3rd to Mr. and Mrs. Brian L. Shera of Tacoma. Brian Shera, Senior, is connected with the Pennsylvania Salt Manufacturing Company of Washington, and friends report that the young son will be raised on chlorine.

SPECIAL LIBRARY SERVICE

The Library of the Institute of Paper Chemistry, Appleton, Wisconsin, is now located in the new Kimberly Memorial Building, where it occupies the entire first floor. It has been organized for the purpose of serving the students and the faculty of the Institute of Paper Chemistry and the chemists and technologists of the pulp and paper industry. To contributing members it gives the following service:

A monthly bulletin is being issued, listing all new books and periodicals added to the library and containing titles and abstracts of articles published during the previous month in the field of pulp and paper chemistry and technology. An occasional comprehensive bibliography will be included.

At a nominal cost the librarian will furnish complete reference lists on chemical and technical problems for member mills, and will procure translations, photostats or abstracts of the articles listed. Upon request member mills working on special problems will be kept in touch with new publications related to their work.

TAPPI SPECIAL MOVIES READY

The TAPPI Special, logging and pulp mill pictures taken by Roger Egan during the International Convention are now ready for duplicating.

A catalog of these films has been published by the Northern Pacific Railroad. The films have been divided into various sequences, so that duplicates can be made of one or more sequences as desired.

The TAPPI Special film has been slightly revised and edited since it was exhibited at Portland. The film totals 550 feet and tells the complete story of what happened on the TAPPI Special from Chicago to Portland. Total cost is \$35.00. Separate sequences cost according to the length ordered.

The logging picture has been revised considerably. Sketches of the skidding operation were made and photographed, explanatory titles were added on Roger Egan's new Titler presented to him by TAPPI at Portland. The complete reel is 200 feet entitled "Pacific Coast Logging" and costs \$20.00.

The "Pulp Mill Scenes" consists of pictures taken at the Soundview Pulp Company and the B. C. Pulp Company. The reel is well arranged in process continuity and the pulp operation is explained by frequent titles. This reel totals 350 feet and costs \$22.50.

All of these films are on 16 mm Eastman kodak safety positive. 8 mm duplicates can be made at a cost of 15c per foot.

Anyone interested in securing duplicates can write for a copy of the catalog to Pacific Pulp & Paper Industry, 71 Columbia Street, Seattle, Washington, or to Al Quinn, Stebbins Engineering & Mfg. Company, Textile Tower, Seattle, Wash.

NEW MACHINERY ORGANIZATION

The General Iron & Steel Works of Portland, Oregon, announce the purchase of the Smith & Watson Iron Works plant, later known as the Smith & Valley Iron Works, and the Smith Iron Works.

Alfred F. Smith is the new president and J. L. Jennings will be general manager.

The new company will continue to specialize in the manufacture of machinery for pulp and paper mills, sawmills and logging camps. Marine repairing, steel plate work and general machine work will also be handled.

BLUE EAGLE RESTORED TO ST. HELENS

Mr. Max Oberdorfer, president and general manager of the St. Helens Pulp & Paper Company of St. Helens, Oregon, advised PACIFIC PULP & PAPER INDUSTRY on December 15th that the Blue Eagle had on that day been restored to his company.

The Compliance Board of the NRA had previously deprived the St. Helens Company of the right to use the Blue Eagle after a hearing held in Washington November 26th. The hearing was called as a result of a complaint by the Executive Authority of the Kraft Paper Division of the Paper Industry Authority, which alleged that the Graham Paper Company of St. Louis, acting as agent for the St. Helens Pulp

& Paper Company, filed a bid with the Woolworth 5 and 10 cents Stores Company offering to sell an unspecified quantity of kraft paper below the lowest filed price.

It is understood that the St. Helens officials admitted the alleged violation of the Code, but explained that the cause of the trouble was an error in computing the price. It is evident that the Compliance Board was impressed with this claim or it would not have restored the Blue Eagle to the St. Helens company within a little more than two weeks time after it had been taken away.

At the November 26th hearing no action was taken against the Graham Paper Company, except to schedule the case for future hearing.

CROWN AND CROWN-ZELLERBACH CONTINUE TO IMPROVE EARNINGS

The first six months of their fiscal year ending October 31st was a successful period for both Crown-Willamette Paper Company and the Crown-Zellerbach Corporation. The statements show increased per share earnings for both companies.

Crown-Willamette Paper Company for the first half of the fiscal period had a net profit of \$924,878 compared with a net profit for the similar 1933 period of \$477,471, an increase of \$447,407. This exceeds \$4.62 per share on the 200,000 shares of first-preferred cumulative stock outstanding and compares very favorably with the \$2.38 per share earned in the same period of 1933 and with \$2.03 per share earned in 1932.

A summary of the earnings of Crown-Willamette Paper Company and subsidiaries, including Pacific Mills, Limited, of Ocean Falls, B. C., for the first six months of the fiscal period of 1934 compared to 1933, show: Profit before depreciation, depletion, bond interest and income taxes of \$3,147,744 against \$2,566,146; after deduction of the above items which amounted to \$2,205,785 for 1934 and \$2,080,377 for 1933 there was a net profit before deduction of minority stockholders' interests of \$941,959 in 1934 against \$485,769 in 1933. After deducting the interest of minority stockholders in the profits of Pacific Mills, Lim-

ited, amounting to \$17,081 in 1934 against \$8,298 in 1933, a net balance was left of \$924,878 in 1934 against \$477,471 for 1933.

Crown-Zellerbach

The net profit of Crown-Zellerbach Corporation for the first six months of the 1934 fiscal year ending October 31st, amounted to \$736,267 compared with \$709,463 for the same period of 1933 and \$35,911 in 1932.

The above earnings are equivalent to more than \$2.93 a share on the 250,601 shares of preferred stock, series A and B, outstanding, and compared with \$2.83 a share in the same period of 1933 and 14 cents a share in 1932.

A summary of the consolidated profit and loss for the comparative periods of 1934 and 1933 follows: Profit before deductions, \$4,653,559 against \$4,133,520; deducted for depreciation, depletion, bond interest and income taxes, \$3,077,210 against \$2,938,119.

The net profit before deducting the minority stockholders' interests was \$1,576,348 in 1934 against \$1,195,401 in 1933. Minority stockholders deductions totaled \$840,081 in 1934 and \$485,938 in 1933, leaving a net profit accrued to Crown-Zellerbach stockholders of \$736,267 for the first six months of the 1934 fiscal period against \$709,463 for the same 1933 period.

KRAFT PULP PRICE STABILIZED

News comes from New York that a price of \$1.65 per 100 pounds or \$33 per ton for prime foreign kraft pulp has been decided upon for 1935. This price is ex dock American Atlantic ports. Prices on extra desirable grades will be slightly higher.

It is reported that the regulation of kraft pulp prices will be similar to that exercised over sulphite pulps. There is now a trade understanding on the three major classes of chemical wood pulp.

The kraft price agreed upon is somewhat lower than that prevailing during most of this year which has been around \$1.85 per pound. Recently the market dropped to the level now decided upon as the price for 1935.

Selling of kraft pulp has been stimulated by this price drop and stabilization and numerous contracts have been made for next year. Sulphite pulps remain inactive, the paper mills buying for immediate needs only for the most part.

OPPOSE TREATY WITH SWEDEN

Senator Steiwer of Oregon late in November notified Secretary of State Hull that the paper manufacturing companies of Oregon were opposed to any trade agreement with Sweden which would result in reducing the existing duties.

He warned the State Department that any agreement with Sweden involving a trade concession on paper or pulp would inevitably be harmful to the West Coast.

Senator Steiwer stated that all the plants on the Pacific Coast together with their employees would be endangered by any trade treaty reducing existing protective duties.

B. C. NEWSPRINT PRODUCTION UP

British Columbia's newsprint production in 1934 represents an increase of about ten percent over 1933, according to figures compiled by the provincial government, based on a survey of the first ten months' operations.

JAPANESE KRAFT PULP MILL PROJECTED

A plan to establish a company to manufacture 15,000 tons of kraft pulp annually has been advanced by Mr. Keizaburo Sumiya, president of the Takasaki Cellophane Company, and others. The proposed concern will be established in Korea with a capitalization of 5000,000 yen.

McMASTER DENIES RUMOR OF NEW PAPER MACHINE

Increase in the price of newsprint and other developments of the last few weeks will not bring about any enlargement of Powell River Company's productive capacity, A. E. McMaster, vice-president and general manager, told Pacific Pulp & Paper Industry.

"The rumor continues to bob up that we are going to install another machine, and there is no truth in at all," said Mr. McMaster. "So far as output is concerned we are going to be content with the present setup for a while. The market will have to be substantially better before we even contemplate further expansion."

Powell River Company, however, has been putting the finishing touches on its new chemi-pulp equipment, however, and the new mechanical units involved in this development will be in full operation by the end of the year. While it is expected that this installation, which cost several hundred thousand dollars and represents the biggest outlay since completion of the Lois River power project and setting-up of the last paper machine, will materially improve the product, making the newsprint whiter and more adaptable to modern high-speed presses, the amount of news-

print to be produced will not be increased at all. Production will continue to run along at about 650 tons daily.

The \$2.50 a ton increase in newsprint prices, although not large, is at least a step in the right direction and it should lead towards further stabilization of the industry, especially in the east, Mr. McMaster believes.

Inasmuch as government pressure is being brought to bear on St. Lawrence Corporation, the only Eastern Canadian company to enter into 1935 contracts at the old prices, and it may be forced to fall in line with the figure adopted by the majority, the southwest states and certain sections of the Pacific Coast served by Powell River Company may continue to be the lowest price newsprint zone on the continent. Powell River Company renewed contracts at the old figure in the face of strong competition because of special consideration for the economic conditions affecting consumers in the southwest, and there is no possibility of interference with these contracts, so far as the Canadian government authorities are concerned. Powell River Company has never been more than indirectly affected by price policies of the eastern mills.

BEN LARRABEE WITH BROWN

Word comes from the East that Ben T. Larrabee, formerly superintendent of the Olympic Forest Products Company and the Pulp Division of the Weyerhaeuser Timber Company, has joined the organization of the Brown Company of Berlin, New Hampshire.

At present Mr. Larrabee is doing special work in connection with sulphite cooking and acid making.

Before coming to the Pacific Coast in 1930, Mr. Larrabee was for many years sulphite superintendent of the S. D. Warren Company at Cumberland Mills, Maine. He left the Pacific Coast in May of this year and has been living at his old home in Maine.

R. W. SIMERAL

Mr. R. W. Simeral, manager of the Fir-tex Company of St. Helens, Oregon, has been designated as the company's representative in the Portland Chamber of Commerce.

OREGON COURT REFUSES RE-HEARING

The Oregon Supreme Court has refused to grant a re-hearing of the suit brought by Dollar and Fleischacker interests to prevent the sale of the plant and properties of the Sitka Spruce Pulp & Paper Company, to K. O. Fossee of Seattle.

The supreme court recently held that the sale of the properties by the trustees was final and not subject to redemption by the former owners. The present petition just denied, sought to obtain another hearing on the ground that the original owners would pay the purchase price of \$74,000 plus interest and other expenses. The petition further sought to have the property resold and all proceeds over the purchase price paid to the unsecured creditors.

According to reports from Marshfield, Oregon, a possibility exists that the case may be carried to the United States Supreme Court.

ELWHA'S RAMPAGE SHUTS DOWN WASHINGTON PULP

Such large quantities of silt were carried into the Washington Pulp & Paper Corporation's water system when the upper Elwha River cut a new channel for twelve miles, that it was necessary to shut the mill down from November 6th to 23rd.

Heavy rains and melting snows caused great slides which brought about the Elwha's change in its channel between Mills Lake and Press Valley.

When the dirt content of the water supply reached unprecedented proportions Chris Morgenroth, a pioneer forest ranger, was sent into the Olympics to determine the cause of the trouble. He surveyed about twenty-two miles of the Elwha and reported that the slides and tree jams which had caused the change of channel, were enormous.

During the highest flood stage the dirt content reached 9400 pounds per million gallons as compared with a normal of about 40 pounds per million gallons.

After the surface dirt had been washed away from the new channel the water cleared sufficiently to permit resumption of mill operations. Filters were thoroughly overhauled during the shutdown.

The Fibreboard Products mill at Port Angeles kept going by employing water from the city's Morse Creek system.

The Olympic Forest Products Company operated steadily during the period of high water, as its water supply was not seriously effected.

PLAN EMPLOYEES ORGANIZATION

The pioneer and five year employees of the Rainier Pulp & Paper Company at Shelton, Washington, gathered late in November for the purpose of forming an organization to award service medals similar to those given by the Zellerbach Paper Company and the National Paper Products Company.

The pioneers are those who were working at the mill when operations began in 1927, and they already have a social organization.

The five year men formed a permanent organization and elected Ralph Wagner as president. A. S. Viger was appointed chairman of a committee to draft by-laws and to check the company rolls to determine the number of men qualified as pioneers and five year men.

PORT TOWNSEND EMPLOYEES AWARDED SERVICE PINS

On the evening of November 15th ninety-five employees of the Port Townsend mill of the National Paper Products Company gathered at the Townsend Golf Club for a dinner as guests of the company, to receive service pins for five or more years of service.

After the dinner each employee was personally presented with his pin by J. D. Zellerbach, president of the company, who made a special trip from San Francisco to attend the ceremonies.

Mr. E. W. Erickson, resident manager, called attention to the large number of men at the Port Townsend mill who have service pins. He said that 249 employees or 80.3 percent of the total of 309 possible if all of the original employees were still at Port Townsend have service pins. 231 have five years pins, 10 have ten year pins, 4 have fifteen year pins and 4 have twenty years pins. Mr. Erickson said this was a record to be proud of since it means that of all the men going on the payroll something less than one man per month leaves.

Mr. A. B. Lowenstein, who was manager of the Port Townsend plant during its construction and for several years thereafter, came West to attend the dinner from New York, where he is now vice-president in charge of sales. He was called upon to speak and said he was glad of the opportunity to return and see his old friends again. He brought greetings from a number of men who formerly lived in Port Townsend, but who are now at the company's mill in Carthage, New York, W. A. English, Charles Grondona, Peter Sinclair and Emil Jellinek. Mr. Lowenstein was awarded a ten year service pin.

Mr. Zellerbach, after being introduced by Mr. Erickson, said it was a pleasant duty to present the service pins as the company was very proud that so many loyal employees had earned their service rewards. He added that the Port Townsend plant, in operation a little over six years, is one of the most efficient allied with Crown-Zellerbach, which in its sixty years of existence has grown to the second largest in size in its field and a leader in the strength of its organization.

He went on to say that while the last few years had been among the most difficult in the history of the

country the Crown-Zellerbach organization has the best record of any large corporation in the paper business. Mr. Zellerbach ascribed this success to the fine spirit of the organization, the willingness to co-operate and pull together for the common good. All of the mills of the company are now operating except one, which has been closed on account of obsolescence. He said he believed that the country is now on the upgrade and that the Zellerbach organization in particular is in a stronger position today than it was in 1929 as regards personnel.

Mr. Zellerbach paid a tribute to Mr. Erickson the resident manager, who received a fifteen year service pin. Mr. Erickson, he said, had worked in most of the mills in the organization and had distinguished himself for his loyalty and efficiency.

As he called each man to receive his pin, Mr. Zellerbach said the service pins were a badge of service and loyalty.

A complete list of those who received the awards follows:

Fifteen Years Pins

E. W. Erickson, J. H. Quigley.

Ten Year Pins

Wm. Cotterill, C. W. Hoaglin, Walter Robinson, Henry Savard, A. B. Lowenstein.

Five Year Pins

E. M. Acker, Leonard Balch, Art Beckman, P. C. Bishop, Floyd Brenner, A. H. Brooling, August Brooling, Ray Brooling, John M. Cable, W. B. Camfield, W. C. Clay, Arnold Cruickshank, P. T. Danzer, Howard Davis, J. K. Davis, E. J. Dupuis, V. E. Edney, Gale Eikenberry, O. B. Engvolsen, Manuel Enos, B. A. Erickson, Carl R. Erickson, E. M. Erickson.

Clyde Hackney, F. J. Haight, Chas. Hanby, Harley Harper, W. H. Hathaway, John Hearing, H. P. Hirschel, Forrest Horton, S. C. Huffman, J. H. Huybers, Wm. Jenkins, Emil Kaiser, Howard Knutzen, Henry Kreiger, Karl Kuehn, Ernest Kunz, Charles Larsen, Harvey Larsen, Irvin Lehman, Willard Lindley, May Lucas, John Magee, Ralph Manney, C. L. March, Frank E. McCullough, E. T. McDougall.

Allen McMannis, John Mee, Peter Meister, W. C. Meyers, J. F. Minnihan, M. E. Minnihan, T. N. Monahan, Homer Moss, Olaf Olson, A. D. Paige, George Parmeter, Wayne

Pickett, R. A. Polk, G. C. Purcell, C. H. Purdy, Esther B. Ray, A. L. Royce, H. D. Sackett, Harry Sindel, James Silva, F. J. Simcoe, C. W. Sinclair, K. Stenstrom.

Frank Stromberg, J. D. Sullivan, P. W. Sullivan, Charles Tidd, Lee Tobin, P. Q. Tobin, Wm. Trager, T. R. Twiggs, L. E. VanMeter, Ray Worley, E. H. Weeks, Guy Whitman, Edward Will, J. L. Winters, Harry Woolaver, Murry Young and John Zaccardo.

NEW TOWN BEING BUILT BY CROWN-WILLAMETTE

Four miles northeast of Seaside, Oregon, the Crown-Willamette Paper Company is building a permanent camp as a base for new logging operations begun in this area the past spring.

Twenty-five family residences and twenty-five bunk houses have already been erected together with machine shops, offices and auxiliary buildings.

Approximately 200 men are employed at the camp. Operations are expected to be permanent due to the reforestation methods employed by Crown-Willamette. Last spring Crown-Willamette moved into the region near Seaside when it purchased timberlands on the head waters of the Lewis and Clark River. About four and a half million feet of timber is logged monthly. T. B. Jackson is superintendent of operations.

ANTIOCH'S TWENTY YEAR CLUB

The Antioch, California plant of Fibreboard Products, Incorporated, has many veterans. Charles Meyers, mill superintendent, has the longest service record, 32 years. Vito Tino comes next with 26 years of service. Frank Ellsworth and Ross Sigari tie with 25 years each. Miss Loretta Kelley, president of the Twenty Year Club, and Joe Gomez have each worked for the company 23 years. O. A. Plank and Walter Altizer each have a record of 22 years. George Cooper and C. Grazianni have 21 years of service behind them, as has G. W. Harter, plant manager.

Fred Stovesand is the youngest in point of service, having a mere 20 years record.

OREGON PULP GOES ON 24- HOUR SCHEDULE

Oregon Pulp & Paper Company of Salem, Oregon, resumed operations after Thanksgiving on a 24-hour day basis for an indefinite period.

FOREST FIRE INSURANCE DECLARED FEASIBLE

The recent completion of the investigative phase of the forest insurance study in the Pacific Coast territory is announced by the branch of research of the Forest Service.

The project, conducted through the Pacific Northwest Forest Experiment Station and the California Forest and Range Experiment Station, has been in charge of H. B. Shepard, a trained forester with experience in fire insurance.

The purpose of the inquiry has been to determine why the owners of forest properties do not enjoy fire insurance facilities comparable to those afforded other owners and whether means could not be devised for effecting practical and economic forms of insurance cover for them.

The inquiry, which has included a detailed study of forest fire losses of the past twenty years, concludes that, as far as the extent and character of losses are concerned, there is no real reason why forest fire insurance should not function successfully in the territory. Neither does it find any administrative or technical obstacles that appear insurmountable. Furthermore, this territory, containing as it does approximately two-thirds of all the merchantable timber in the country and extending over a wide range, can support an insurance organization in itself whether or not such business is done in the rest of the country.

As an example of the favorable aspect of the loss situation the following figures are quoted from the report: The average annual rate of loss established for the Douglas fir region, on a weighted value basis, is 0.047 percent (4.7 cents per \$100 of value per year) from ordinary fires, all forest types and tree size classes included; the same figure for the northern ponderosa pine region is 0.119 percent, and for the sugar pine region, 0.133 percent. These two latter regions show no evidence of ever having suffered major conflagrations whereas the fir region has been and very evidently still is strongly subject to this form of loss at periodic intervals. Fortunately it appears that the normal major conflagration interval has been not less than approximately thirty years.

Nevertheless the damage has been, on an annual basis, considerably in excess of that caused by the ordinary run of fires. A study of the existing statistics shows that these major conflagration losses in the region amount to an equivalent of approximately 0.080 percent per year. While precise figures are not possible because of inadequate statistical records of previous conflagrations, it appears that they have been causing nearly twice as much loss as the ordinary run of fires and that they put the aggregate annual loss expectation of the fir region between twelve and thirteen cents per \$100 of value, that is, approximately equal to that of the two pine regions.

The significance of these figures is that, as far as losses are concerned, there is no reason why forest insurance should not be available to owners in the territory for a maximum average premium rate of twenty-five cents per \$100 of insured value. If everybody were to insure, this rate level would be an entirely practical one. Based on the uncertainty as to the volume and character of business that could actually be done, the inquiry has recommended a rate basis approximately twice this figure, for initial development. It has produced suggested rate schedules, one for each region, which, if used as a basis for insuring all the property in the territory, would yield premium at an average rate of forty-five cents per hundred dollars of insured value (0.45 percent).

It is of course highly essential that specific insurance rates express a measure of the relative hazard incurred by the property insured. Provision for this comprised the greatest single phase of the work. Starting with a basis rate of two and one-half cents, the suggested premium rate schedules provide for charges for a considerable number of factors of hazard increase and also for credits for reduction of hazard. Exposure to causes of fires such as railroads, recreation, and logging calls for proper increase in the rate. Certain physical factors such as composition of the stand, relative density, slope of the terrain, and condition with respect to brush or slash, are known to affect the relative haz-

ard of any given property so, where they are adverse, they must be charged for. Adverse climatic conditions and deficient protection must also be met by proper charges. Where conditions exist that reduce the hazard in ways somewhat out of the ordinary, adjusted credits can be given. The schedules allow for such conditions.

The establishment of a workable rating method is not the only requirement of successful insurance. Administrative and technical features must not be prohibitive. In order to ascertain the facts with respect to these matters the study included inquiries into the principles of forest valuation for insurance purposes, the probable requirements of loan adjustment and policy contract terms, and other administrative features. No evidence was disclosed of difficulties greater than others that have been successfully met in the past in the insurance and timber businesses.

In a few words, forest owners can have fire insurance on their properties if they really desire it in sufficient volume and are willing to support an insurance project. Like many other undertakings, the more support it receives the better it can be, not only as to cost but as to service rendered. What the actual outcome may eventually be can not now be foreseen. The insurance study has at present no definite plans for extension work. What is done along this line will depend to a considerable extent on the interest that is displayed and the apparent demand for such an activity.

ARRANGE NEW WATER CONTRACT

For several months the water contract between the city of Anacortes and the Puget Sound Pulp & Timber Company has been in the process of revamping. All parties were finally suited with the draft presented to the City Council November 20th and the contract was authorized by the city. Under the new terms the Puget Sound company will not receive the benefit of the \$500 per month reduction during close-down periods unless the mill is closed for thirty days or more.

CROWN-WILLAMETTE GIVES PARK TO CAMAS

The Crown-Willamette Paper Company recently donated seven and a half acres of land to the city of Camas to be used as a park. The tract is located on the hill between Jefferson and Plain streets.

SUGGESTIONS MAKE GOOD BUSINESS

The October issue of Fibreboard Container, organ of the Antioch, California, plant of Fibreboard Products, Incorporated, contained an interesting article by Sumner Perkins, assistant plant engineer on the suggestion system in use at the Antioch mill. We reprint the article herewith. The October number was, by the way, the first issue of the Fibreboard Container.

"We are working for a company that today has plants extending the length of the Pacific Coast, and also factories in the Hawaiian Islands. One of these plants, our own Antioch mill, has been in existence over thirty-five years. At one time, the buildings of this mill were merely frame structures, and actually in such poor condition that props were needed on the outside to keep the walls from collapsing!

"Looking back at that small, dingy group of buildings of thirty-five years ago, we can but marvel at the growth that has made our plant the modern industrial unit it is.

"What is behind this growth? Many factors are involved, among them the natural expansion of the West, and our fine location. Also let us not forget the loyalty and co-operation of Fibreboard employees, making possible the free voicing and exchange of ideas.

"NO ACHIEVEMENT OF MANKIND, NOTHING THAT THE HUMAN RACE HAS EVER BUILT OR CONSTRUCTED WAS ACCOMPLISHED WITHOUT FIRST BEING AN IDEA IN SOMEBODY'S HEAD.

"In this mill the good ideas—suggestions, we might call them—developed into improvements and changes in methods, and the evolution took place which gives us today our modern Antioch plant.

"What has become of the men who had real ideas to contribute? We need mention only four of the 'old timers' to illustrate that it pays to do one's constructive thinking out loud. Mr. Harter, plant manager, has completed twenty years service with the company. Charles Meyers, superintendent of the board mill, started out as roustabout thirty-one years ago. Frank Ellsworth, master mechanic, operated one of the paper machine steam engines over twenty-five years ago. The first boilers which Walter Altizer, power house foreman, cleaned up with his overalls, have long ago faded out

of the picture. To mention one of our younger men, Ted Malianni, former assistant to Gene Vassar, Bedaux manager, last year received a promotion to the head office as the result of suggestion he submitted.

"The fact stands out, then, that these men gained their present position because they had ideas, and because they contributed their ideas that the plant might benefit.

"In order to give proper credit and encouragement to all employees with ideas and suggestions, the company in 1928 inaugurated the Suggestion System, which provides a five dollar monthly prize and fifteen dollar semi-annual prize.

"The following summary of the number of suggestions received since the birth of the system is interesting:

1928	33
1929	117
1930	212
1931	259
1932	155
1933	154
1934 (to date)	179
Total	1109

The monthly prize awards this year have been received by the following:

January—A. Luiz, No. 1 Machine.
February—A. Fette, Mechanical Maintenance.

March—C. Cekola, Carton Department.

April—E. Cribbs, Carton Department.

May—J. Duane, Electrical Department.

June—H. Fletcher, Carton Department.

July—J. Dalton, Raw Material Storage.

August—A. Fette, Mechanical Maintenance.

September—E. Calisesi, Corrugating Department.

"The semi-annual award for the first six months of this year has not been made.

"To continue our splendid growth, we must be united. Our organization can be knit into a still more solid unit, and our mutual prosperity can be still further advanced by keeping the suggestion box filled with new ideas.

"That is good business."

L. A. LINVILLE

L. A. Linville of the Jaite Bag Company of St. Helens, Oregon, pany's representative to the Port was recently named as the company's representative to the Portland Chamber of Commerce.

PULP IMPORTS—UNBLEACHED INCREASES

Although imports of pulp for the first ten months of 1934 were 20,959 tons less than for the same period of 1933, it is significant that imports of unbleached sulphite pulp increased 5,412 tons to 494,799 tons, and the value of \$17,673,406 was \$2,834,190 greater than for the 489,387 tons imported in 1933.

Total chemical pulp imported the first ten months of 1934 amounted to 1,188,773 long tons, valued at \$48,048,212, compared with 1,209,732 long tons of a value of \$41,884,386. The increase in value amounted to \$6,163,826 although 20,959 fewer tons of pulp were brought into the United States.

OCTOBER PULP IMPORTS HIGHEST OF YEAR

Imports of chemical pulp reached the highest monthly level of 1934 in October with a total importation of 148,157 long tons, valued at \$6,078,351, according to the U. S. Department of Commerce figures. In September the tonnage was 124,591 long tons and the value \$4,971,827.

Unbleached sulphite showed the greatest increase over September. October imports were 61,126 tons valued at \$2,302,642 against September imports of 54,605 tons valued at \$1,963,401. Bleached sulphite imports in October were 33,693 tons valued at \$1,820,632, compared to 26,156 tons valued at \$1,432,466 in September.

EXPORTS OF U. S. PULP SHOW SHARP INCREASE

During the first nine months of 1934 exports of United States pulp reached 92,379 long tons as compared with 48,712 long tons in the same period of 1933. The value of the 1934 exports for nine months was \$5,071,095 contrasted with a value in the same 1933 period of \$2,034,208.

Of the 1934 tonnage total sulphite pulp comprised 89,845 tons with a value of \$4,919,702, against 47,660 tons valued at \$1,990,696 in 1933 period.

McMASTER ON COAST

Leonard McMaster of the Astens-Hill Manufacturing Company of Philadelphia, makers of Astens-Hill asbestos dryer felts, visited the Coast in late November and early December, calling on a number of mills with Mr. Walter S. Hodges Pacific Coast representative.

Mr. McMaster remained to attend the superintendents' meeting in Tacoma, December 7th and 8th.



F. J. REYNOLDS NEW BRISTOL REPRESENTATIVE IN NORTHWEST

The Bristol Company of Waterbury, Connecticut, makers of temperature recording and controlling instruments, have selected Mr. F. J. Reynolds as their Pacific Northwest representative. Mr. Reynolds has been associated with the Bristol Company since 1920 and has had wide experience in industrial instrumentation. He will travel out of the San Francisco office of the Bristol Company.

Mr. Reynolds attended the third meeting of the superintendents' association December 7th and 8th in Tacoma.

To provide quicker deliveries and save transportation costs to their customers in the western states and the Far East, the Bristol Company announce that manufacturing facilities have been established in San Francisco and that a number of their temperature recording and control instruments will be assembled there from now on.

The announcement was made by H. L. Griggs, vice president and general sales manager, who came out from the East in November to supervise the inauguration of the new facilities.

Recording thermometers, indicating pyrometers, recording electrical instruments and recording humidity instruments are the items to be assembled at the branch laboratory plant at 311 Minna Street. Any Bristol equipment will be repaired here, and the laboratory and service work is under the direction of a foreman who has had many years in the manufacturing department at the main factory at Waterbury, Conn.

Four more states — Montana, Utah, Idaho and Arizona—have been added to the district under charge of S. W. Case, district manager, which already includes California, Oregon, Washington, Arizona, Alaska and the Far East. Increased service has been provided for the Northwest by the addition of a Northwest sales and service engineer. In charge of the Los Angeles sales branch at 747 Warehouse St. is W. H. Rogers, sales and service engineer. The San Francisco district headquarters are in the Rialto Building.

The Bristol Company are pioneers in recording instruments, having been established in 1889. Many of their instruments have been in service on the Pacific Coast for 20 to 30 years, and Mr. Griggs announces that the company can rebuild these old-timers so that they will include all the modern improvements.

UNION INTRODUCES INDUSTRIAL LUBRICATING OIL

The Union Oil Company of California has just brought out TRITON, a paraffine base lubricating oil refined from California crude oil by a special propane gas and solvent process developed by the company's research laboratories. The new process removes wax, asphalt and all volatile light-end parts of the crude oil leaving nothing but the desired lubricant which will retain its original volume and viscosity over longer periods than will other oils, either Eastern or Western.

It is said by the Union Oil Research Department that Triton contains less carbon and as a result deposits a very negligible amount under the most severe service.

These qualities suit Triton to the exacting service of pulp and paper mill lubrication. It is claimed that Triton will prove more economical than the best Pennsylvania oil because it is all lubricant, will last longer and neither volatilizes nor deposits carbon.

This latter quality should make Triton particularly suitable for lubricating dryer bearings where excess heat often causes the deposition of carbon on the bearings. Although on most modern pulp dryers and paper machines an oil circulating system is employed to minimize the carbon deposit in the bearings, the heat of the dryers forms carbon which the filters must remove. The cheaper the oil the more frequently the filters must be cleaned and the oil replenished. Triton should ma-

terially reduce the necessity of cleaning the filters frequently, and too, reduce the amount of oil needed to keep the circulating system full.

Heat from the dryers also causes the cheaper oils to volatilize, the lighter parts of the oil evaporate, requiring the addition of fresh oil. It is claimed that the use of Triton will cut down the loss from the evaporation under heat of the lighter ends, for these have been removed in the refining process.

Dryer temperatures also reduces the viscosity of cheaper oils, often rendering them useless as a lubricant after comparatively short service. Triton retains its viscosity under extreme heat. Tests in automobile engines under severe heat show that at the end of 1000 miles of driving Triton changed its viscosity less than 1 per cent while other oils change as much as 15 per cent.

Triton is available in all grades for every lubricating oil job in the pulp or paper mill.

LEE SURVIVES LANDSLIDE

William H. Lee, treasurer and general manager of the Lockport Felt Company, was re-elected state senator on the Republican ticket, being one of few Republicans to withstand the landslide for the New Deal.

Mr. Lee, whose home is in Lockport, New York, ran ahead of the rest of the Republican ticket and even won out in precincts where the rest of the vote went Democratic. The vote attested to his personal popularity and ability as a legislator.

NATIONAL ANILINE JOINS TAPPI

The National Aniline and Chemical Company has become a company member of the Technical Association of the Pulp and Paper Industry and will be represented in the association by Ivar Ekholm who is well known in the paper industry.

OLIVER FILTER ISSUES NEW BULLETIN

The Oliver United Filter Company recently published a bulletin devoted to the application of its equipment to the pulp and paper industry. Each type of filter is shown in installation photographs and full operating data is given. Copies may be obtained from Oliver United Filters, Inc., Balfour Bldg., San Francisco.

ALASKA

Charles H. Flory, regional forester of the United States Forest Service with headquarters in Juneau, Alaska, stated a short time ago that the forest service was marking time on the development of the pulp and paper industry in Alaska because economic conditions were still uncertain.

He said that the forest service is confident that when conditions improve generally throughout the United States the development of Alaskan forests will become a certainty.

The two contracts made several years ago for the construction of two 200-ton newsprint mills, one near Ketchikan and the other near Juneau, were abandoned for the time being due to the depression. The Zellerbachs had agreed to build one mill and George Cameron of the San Francisco Chronicle, together with Harry Chandler of the Los Angeles Times, had agreed to build the other in exchange for timber cutting rights granted them by the forest service. Both gave up their rights as conditions did not warrant the expenditure of the necessary money to construct the newsprint mills.

Some years ago the forest service after making an exhaustive survey concluded that the forests of Southeastern Alaska could stand perpetually a cut of a billion board feet of timber annually, and efforts were made to bring about newsprint development which would consume some of this potential timber cut.

The greater part of the timber in Southeastern Alaska is mature and overripe, no longer growing. From an economic standpoint it should be cut to permit young growth to start. In other words the crop, so to speak, is ready for harvesting, but for the lack of a harvester much is gradually deteriorating, and the yearly increment of young growth is only a small part of what it might otherwise be.

PRESIDENT OF LOCKPORT FELT DIES

William W. Campbell, president of the Lockport Felt Company, and a prominent civic leader of Northwestern New York died on November 21st.

Mr. Campbell served as state senator for twelve years. He was succeeded in 1932 by his friend and business associate William H. Lee, treasurer and general manager of the Lockport Felt Company.

PAPER MAKERS HOSTS TO ELKS

Under the above heading the Port Angeles Evening News recently ran the following story:

"It was Washington Pulp night at the meeting of Naval Lodge of Elks last night, with the boys who make the newsprint putting on the party for Elks and invited guests. As hosts, the big paper mill boys reign supreme, three hundred men declared last night after listening to the fine program and partaking of the great 'feed' prepared for them.

"After the lodge session the meeting was turned over to Billy Williamson, head of the Washington Pulp entertainment committee and the following program was given; instrumental numbers by Charles Thompson; accordion solos by Miss Florence Lazarski; orchestra music by the Smith Trio; slight-of-hand by George Davidson and music, songs and dancing by a Hawaiian couple from Seattle and impromptu numbers by Master of Ceremonies Williamson himself, assisted by Jim Glenn. All the numbers were very well received and given.

"After the program lunch was served in the club room. Items on the menu were pigs' knuckles, hot dog sandwiches, cheese sandwiches, ham sandwiches, three kinds of pickles, crackers, olives. Pig knuckle gnawing was one of the feature events of the evening.

"After lunch there was impromptu entertainment for several hours with music and singing."

Why didn't the editor mention the beer?

TAPPI ANNUAL MEETING PLANNED

The annual meeting of TAPPI will be held at the Waldorf-Astoria Hotel in New York City, February 18th to 21st, 1935.

The convention will be a four-day affair, opening with a joint meeting on Monday, February 18, with the American Paper and Pulp Association, when "Management and Labor Relations" will be discussed by outstanding authorities and closing with the annual luncheon, the major event of Paper Week.

Papers and authors are being carefully selected and instead of presenting a heterogeneous group of papers, a number of well defined symposia is being projected.

On Tuesday, February 19, there will be a symposium on paper man-

ufacture which will feature papers on head box design, fourdrinier wires and drier drainage. There will be a symposia on sizing, water and bleaching and one on steam power plants.

On Wednesday, February 20th, a much needed symposium on paper color and optical properties of paper will be the major feature. There will also be a symposium on mechanical pulp, or groundwood, and one on pulp and paper testing.

On Thursday, February 21st, there will be a symposium on stuff preparation which will cover such subjects as beating, refining and measurement of hydration.

One feature of the annual luncheon will be the presentation of the TAPPI medal which is presented for outstanding contributions to the technical advancement of the industry. The principal speaker will be an individual who is well qualified to present the subject of greatest importance to the industry at the time of the meeting.

B. C. PROJECTS INDEFINITE

R. O. Sweezy, Montreal financier representing eastern Canadian and British interests, has returned to the east after a tour of British Columbia without making any further revelation of his plans for a rayon pulp mill on the Pacific coast. It is expected that considerable time will elapse before there will be definite developments in this connection. If anything is done, according to Mr. Sweezy, a tidewater site will be sought so as to take advantage of the cheap water haul. Production of the proposed mill would go chiefly to the British Isles, where a rayon industry is rapidly assuming gigantic proportions, and possibly to Japan, where there is a strong demand for pulp suitable for rayon manufacture. Japan is now second only to the United States in rayon output.

Meanwhile reports continue to originate in Prince Rupert, B. C., concerning a projected mill by associates of F. L. Buckley, for many years a logging operator on the Queen Charlottes.

Chief obstacle to all these proposals is the fact that most of the best pulpwood timber reasonably accessible to tidewater is already held by operating newsprint mills. This is regarded as a serious handicap to the Sweezy plan because a larger spruce content would be required in rayon production than in newsprint, and the best spruce stands remaining are far inland.

T · R · A · D · E · T · A · L · K

of those who sell paper in the western states

+ + + +

PAPER FOOD TRAYS FINDING READY MARKET

The Paper Specialty Corporation of 3109 N. E. Sandy Boulevard, Portland, Oregon, of which George W. Houk is the head, has made much progress in recent months in marketing the Shamrock Brand paper food trays.

Fully automatic machines were specially developed with increased production from three-quarters of a million to two million trays a month. The Shamrock trays are made entirely by machine and are not touched by hand at any stage of manufacture, insuring an absolutely clean and sanitary product.

Mr. Houk calls the Shamrock trays "Triple Treated." This is done to make the trays fully waterproof and greaseproof. The stock is thoroughly waterproofed at the paper mill with a silicate and wax emulsion, and greaseproofed in the Paper Specialty Corporation's own plant with a heavy coating of the purest wax available.

Distribution has been expanded as far East as Wichita, Kansas, and south into Texas. The Hawaiian Islands were recently included in the sales territory.

Northwest railroads have assisted the expansion of the food tray business by permitting the inclusion of the Shamrock trays in carloads of wrapping paper and bags shipped from the mills of the Crown-Willamette Paper Company of Camas, St. Helens Pulp & Paper Company at St. Helens, and the Hawley Pulp & Paper Company at Oregon City to the entire Inter-Mountain and Middle Western territory.

This arrangement is of great convenience to paper merchants by enabling them to move carload lots more frequently from the Columbia River district containing a wide assortment of paper products in one delivery.

LOS ANGELES PERSONALS

S. R. Whiting, California representative of the Inland Empire Paper Co., with Mrs. Whiting and friends, spent Thanksgiving weekend visiting Boulder Dam, returning to Los Angeles through Death Valley.

Among others in the Los Angeles paper fraternity who have taken opportunity to inspect the dam before the water is turned in, have been Mason B. Olmstead of the Zellerbach Paper Co., and Walter Heulat and R. R. Whiteman, both with Blake, Moffitt & Towne.

Sam Abrams, head of the U. S. Paper Co., Los Angeles, flew east last month on a business trip, which he expected to last four or five weeks. He visited Washington, D. C. while away, and also spent some time in New York and Chicago.

Oliver French of the Fred H. French Paper Co., recently entertained some 35 San Diego printers at his Los Angeles offices. They

came up from San Diego by bus, and after a dinner, were shown through the company's warehouse.

Ross Devean, formerly head of the Wholesale Paper & Twine Co. of Los Angeles, which recently retired from business, has become sales manager of the U. S. Paper Co.

The Paper Mills Trading Co. has been established at 1106 So. Glendale Blvd., Glendale, Calif., by Bernard Gilbert. The company will deal in fine papers only.

Richard W. Walker, assistant to S. R. Whiting in the Los Angeles offices of the Inland Empire Paper Co., left December 20 for the company's headquarters at Millwood, where he is to do sales work out of the mill.

He is being succeeded in the southern office by Roger S. Medeen.

Fred H. French, head of the Los Angeles paper house bearing his name, recently returned after an extended trip with Mrs. French to South America.

N. L. Brinker, Los Angeles mill agent, went east last month and was expected to be gone for about 30 days on a business trip to various mill centers.

THOMPSON HEADS ARCTIC CLUB

Mr. John W. Thompson, vice-president of Blake, Moffitt & Towne and general manager of the Seattle branch, was recently elected president of the Arctic Club, one of the oldest club organizations in Seattle.

LEATHERMAN ELECTED AD CLUB PRESIDENT

Mr. John H. Leatherman, manager of the printing paper department of Blake, Moffitt & Towne, was elected president of the Seattle Advertising Club on December 12th by unanimous vote.

This is the first time in the history of the Seattle Advertising Club that a paper man has been elected president.

Mr. Leatherman, who has been with Blake, Moffitt & Towne for twelve years, is also the North Pacific District Representative of the International Club of Printing House Craftsmen.

On November 21st Mr. Leatherman addressed the Seattle Club of Printing House Craftsmen on "Modern Developments in Paper Making." His talk was billed on the program as "A Big Surprise."

STRATHMORE LINES WITH ZELLERBACH

Strathmore Paper Company have announced that they have appointed the Zellerbach Paper Company exclusive Pacific Coast representatives for their Thistlemark, a 100 per cent rag bond, and Goldflake and Silverflake, a patented metallic paper.

SERVICE PINS AWARDED

New service pins this month gleam brightly on the lapels of two Zellerbach Paper Co. veterans. One is A. A. Allen of the Portland office, who won a 30-year pin and the other is L. J. Broadwater of Oakland, who has been with the company 20 years.

OCTOBER NEWSPRINT STATISTICS

Production in Canada during October, 1934, amounted to 235,021 tons and shipments to 228,921 tons, according to the Newsprint Service Bureau. Production in the United States was 80,572 tons and shipments 81,260 tons, making a total United States and Canadian newsprint production of 315,593 tons and shipments of 310,181 tons. During October 25,321 tons of newsprint were made in Newfoundland and 1,953 tons in Mexico, so that the total North American production for the month amounted to 342,867 tons.

The Canadian mills produced 472,032 tons more in the first ten months of 1934 than in the first ten months of 1933, which was an increase of 29 percent. The output in the United States was 24,666 tons or 3 percent more than for the first ten months of 1933, in Newfoundland 44,746 tons or 21 percent more, and in Mexico 3,362 tons more, making a net increase of 544,806 tons, or 20.5 percent.

Stocks of newsprint paper at Canadian mills are reported at 67,994 tons at the end of October and at United States mills 22,596 tons, making a combined total of 90,590 tons compared with 85,178 tons on September 30, 1934.

NOVEMBER NEWSPRINT STATISTICS

Production in Canada during November, 1934, amounted to 240,869 tons and shipments to 262,206 tons, according to the Newsprint Service Bureau. Production in the United States was 74,933 tons and shipments 79,187 tons, making a total United States and Canadian newsprint production of 315,802 tons and shipments of 341,393 tons. During November 28,713 tons of newsprint were made in Newfoundland and 1,756 tons in Mexico, so that the total North American production for the month amounted to 346,271 tons.

The Canadian mills produced 518,048 tons more in the first eleven months of 1934 than in the first eleven months of 1933, which was an increase of 28 percent. The output in the United States was 12,022 tons or 1 percent more than for the first eleven months of 1933, in Newfoundland 46,921 tons or 19 percent more, and in Mexico 3,697 tons more, making a net increase of 580,688 tons, or 19.6 percent.

Stocks of newsprint paper at Canadian mills are reported at 46,488 tons at the end of November and at United States mills 18,425 tons, making a combined total of 64,913 tons compared with 90,504 tons on October 31, 1934.

POOR LIGHTING CAUSES ACCIDENT EVERY 46 SECONDS

Improper use of artificial light caused an occupational accident every 46 seconds and a fatal accident every hour in America last year, according to D. W. Atwater of the Westinghouse Lamp Company and general secretary of the Illuminating Engineering Society.

Of the 1,269,500 occupational accidents (person gainfully employed at time of accident) recorded for the entire United States last year, 15 per cent were traceable to poor lighting, based on statistics of the National Safety Council. For such conditions to exist in 20th century America may be regarded as neglect of available lighting facilities, since many of these accidents are preventable under even average lighting.

COSTS 550 MILLION DOLLARS

Employers in the entire nation paid a total of \$550,000,000 for all occupational accidents in 1933, of which \$420,000,000 represented wage losses, \$40,000,000 the

medical expense, and \$90,000,000 the insurance costs. About \$200,000,000 of this total sum could have been saved through the use of correct lighting, according to Mr. Atwater's estimate.

For every dollar paid out by insurance companies in compensation claims for occupational accidents, the employer must pay four dollars for hidden or indirect costs.

LIGHTING MEANS SAFETY

While carelessness can be blamed for some of these accidents, inadequate lighting is responsible for many others. Judging by the great reductions in accidents made in many industrial plants through the adoption of better lighting, it is safe to assume that a similar improvement awaits us in other industrial establishments. No matter what kind of work engages one's attention, the illumination, providing it is correctly installed and operated, can help immeasurably toward the curtailment of accidents.

Lighting can be the chief provocation of occupational accidents. If the light source is inadequate or produces blinding glare, it induces eye strain that causes a worker to misjudge and err. Workers must see well if they are to work safely.

The better light, better sight nation-wide activity in which the country's eye specialists are cooperating this year, is directed to the goal of educating everyone in the correct use of artificial light. In this manner will human eyes be aided to see better and contribute to safer working conditions.

The JONES PULPER

Among its many utility and economy advantages are absolute retention of fibre character . . . more accurate regulation of stock consistency . . . quick accessibility . . . capacities to 5,000 pounds per hour, and lower horsepower consumption.

Simple in design, sturdy in construction, and enduringly dependable, it offers a sound and profitable investment . . . paying for itself in a short time.

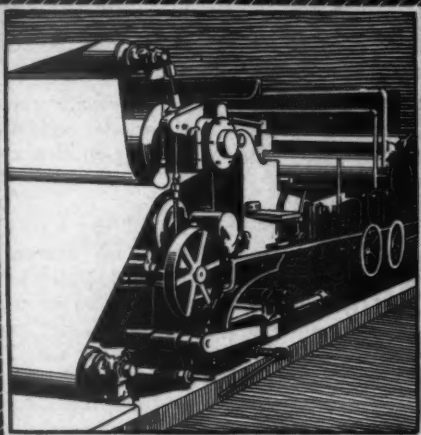
Pacific Coast Supply Co.

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Exclusive Pacific Coast Representative for the entire line of paper mill products made by



A name that has won a world-wide reputation through 75 years devoted to paper-making progress



In Choosing the Right Felts

The right felt for your press has the right warp and woof for your job—the right tensile strength—the right porosity—the right resiliency; high resistance to friction which means wearing quality.

The same rules apply to all your felts—top and bottom and others, regardless of the kind of paper you may make.

When you find such felts you have gone a long way towards maximum dehydration and minimum felting costs.

The Orr line is a quality line and a complete line. Consult an Orr representative and, between you, decide which Orr Felts will best meet your particular requirements; or write to

**ORR FELT and
BLANKET COMPANY**
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Pacific Coast Representative: GEO. S. MEDDIS
1650 No. Point St., San Francisco, Calif.

ORR FELTS

THINK THIS OVER

The mill man who wishes he was like the other fellow who "can afford" to modernize his mill because he enjoys the business and the profits, is putting the cart before the horse. The reason the other fellow is getting the business and showing a better margin between cost and price is because his modern equipment has subtracted from rather than added to his costs and at the same time has bettered his product, making it easier to sell.

The common mistake is to think of machinery in terms of its initial cost rather than on the true basis of cost per ton of paper that the machinery helps to produce during its entire period of service. Cost analyses show that the portion represented by the carrying charges on machinery averages 7 to 10% of the total cost per ton of paper. Other items of cost such as labor, power and general overhead are of far greater magnitude.

When you think of the part machinery plays in the production of so many thousand tons of good paper at low cost per ton—realize the comparatively small proportion of paper cost it represents—doesn't it seem unwise to pass up the really important production improvements and cost reductions that new and up-to-date equipment are capable of effecting?

Quoted from the December STUFF BOX, house-organ of the Bird Machine Company of South Walpole, Massachusetts.

SAFETY

A few of the preventable accidents in pulp and paper mills listed in a recent News Letter from the National Safety Council.

Elevated Walkway—No Handrail

A man was using a steam hose cleaning stock from a decker wire and was standing on a raised walkway erected between two deckers. This walkway is wet and slippery most of the time but was not, however, equipped with any kind of safety tread or non-slip surface. There were no handrails on the platform which is alongside of and directly over the inrunning nip of the decker. While there were no actual eye witnesses, it is very probable that the victim slipped and in the absence of any protection fell, catching his left arm in the inrunning nip between the couch and cylinder rolls. He was drawn into the two rolls in such a way as to crush his left side causing death almost instantly.

The victim was but 17 years old, unmarried and had been employed only two months so that he was not eligible for group insurance.

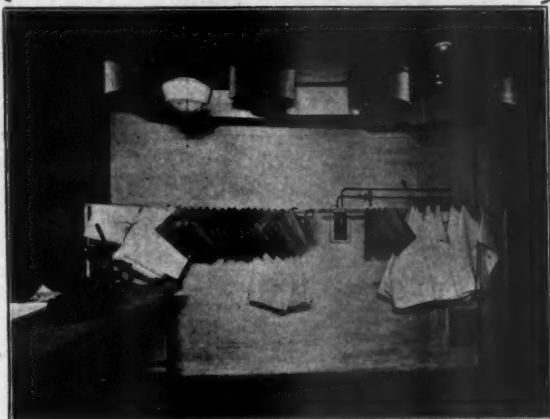
Unsafe Scaffold

An employee at another plant narrowly missed death when a plank in a scaffolding broke and he fell to a concrete floor 24 ft. below. The plant admitted that even with all the instructions that have been issued relative to the carefulness with which lumber for scaffolds must be chosen, that the plank which broke had been in use for about two years, had dried out and that the break occurred in a place where a knot extended over half way across the width.

Poor Walkway Surface

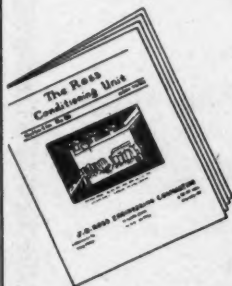
An employee suffered a fractured elbow when he slipped while trucking over a smooth sheet iron plate. The use of old boiler plate and other smooth metal for trucking surface has been advised against for a number of years.

Accurate Economical Testing!



INTERIOR OF TYPICAL PAPER TESTING ROOM

ROSS CONDITIONING UNIT



Copy of this
Bulletin giving
description and
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upon request.

Complete, compact Ross equipment that provides positive control of both temperature and humidity — insuring uniform conditions for testing regardless of outside weather. Equipment is available in several sizes—simple to operate—and low enough in cost to enable any mill to maintain definite test standards throughout the year.

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**“Count that day lost
whose low descending sun views
from thy hands no worthy action done”**

On the basis of that old saying no day is *ever* lost in the fulling room, where the woven pieces are converted into Hamilton Felts.

You learn something new every day, if only how uncertain wool can be. The kind of felt that fulled one way yesterday won't full the same way today. Like children, each has its own individuality.

Experience counts here, probably more than in any other operation. And by the same token, experience is constantly in the making.

And so expert must these fullers be that they are compelled to take a felt twice as wide and only a few feet longer than the paper maker needs it and full it down to within a very few inches of the size on the order sheet.

It's easy to see then the importance of the seventy-six years of experience that goes into the making of a Hamilton Felt. In this case, it's continuous experience . . . experience handed down from father to son to grandson. The same two families, the same partnership, that made Hamilton Felts in 1858 are still making them today.

Try a Hamilton Felt. Your check sheets will soon show you the difference this experience makes.

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Miami Woolen Mills, Established 1858

Hamilton Felts

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MAKE A WORLD OF DIFFERENCE •

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Season's Greetings:



AT this season of the year our thoughts revert to those whose cooperation, loyalty and friendship in the past have so materially assisted us.

... To You All, the Makers of TENAX FELTS extend these greetings:

**A Merry Christmas and a
Happy and Prosperous New Year**

LOCKPORT FELT COMPANY

NEWFANE, N. Y.

Pacific Coast Representative: ALAN C. DUNHAM, Portland, Ore.



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For All Grades of
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are GOOD Wires"**

Appleton Phosaloy Staggered Weave Four-
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do give low average tonnage costs when
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SEAMLESS JOINT**



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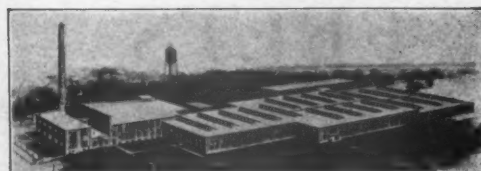
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KENWOOD MILLS

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Manufacturers of Kenwood Felts
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Making Purposes since 1870



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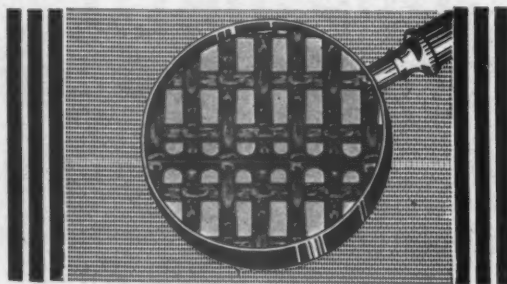
Pacific Coast Sales Agents:

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Seattle, Tacoma, Portland,
San Francisco, Los Angeles and
Vancouver, B. C.

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Appleton Phosloy Staggered Weave
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have demonstrated that they do
give low average tonnage costs.

The Appleton Wire Works, Inc.
APPLETON, WISCONSIN, U. S. A.

*U. S. Patent Nos. 1895605 and 1949593. Others pending.



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Industrial Chemicals

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PLANTS IN ALL PAPER MAKING AREAS
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Superintendents

are you making
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WE have a new Sample Card, showing the best Blue for tinting all grades of Ledger, Bond, Bristol, Bag and Newsprint, which will be of great assistance to you. If you have not received your copy from our representative, write for Sample Card # 14-ET.

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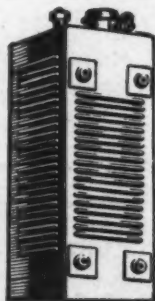
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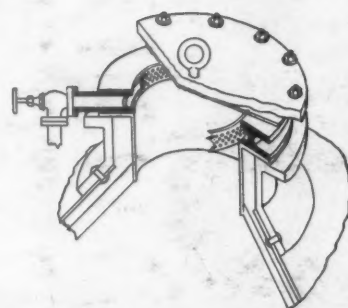
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